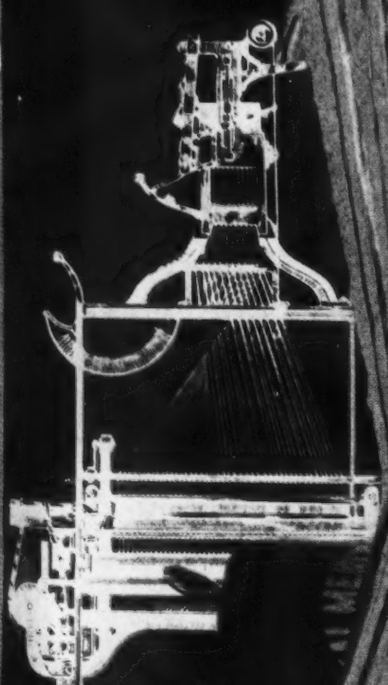
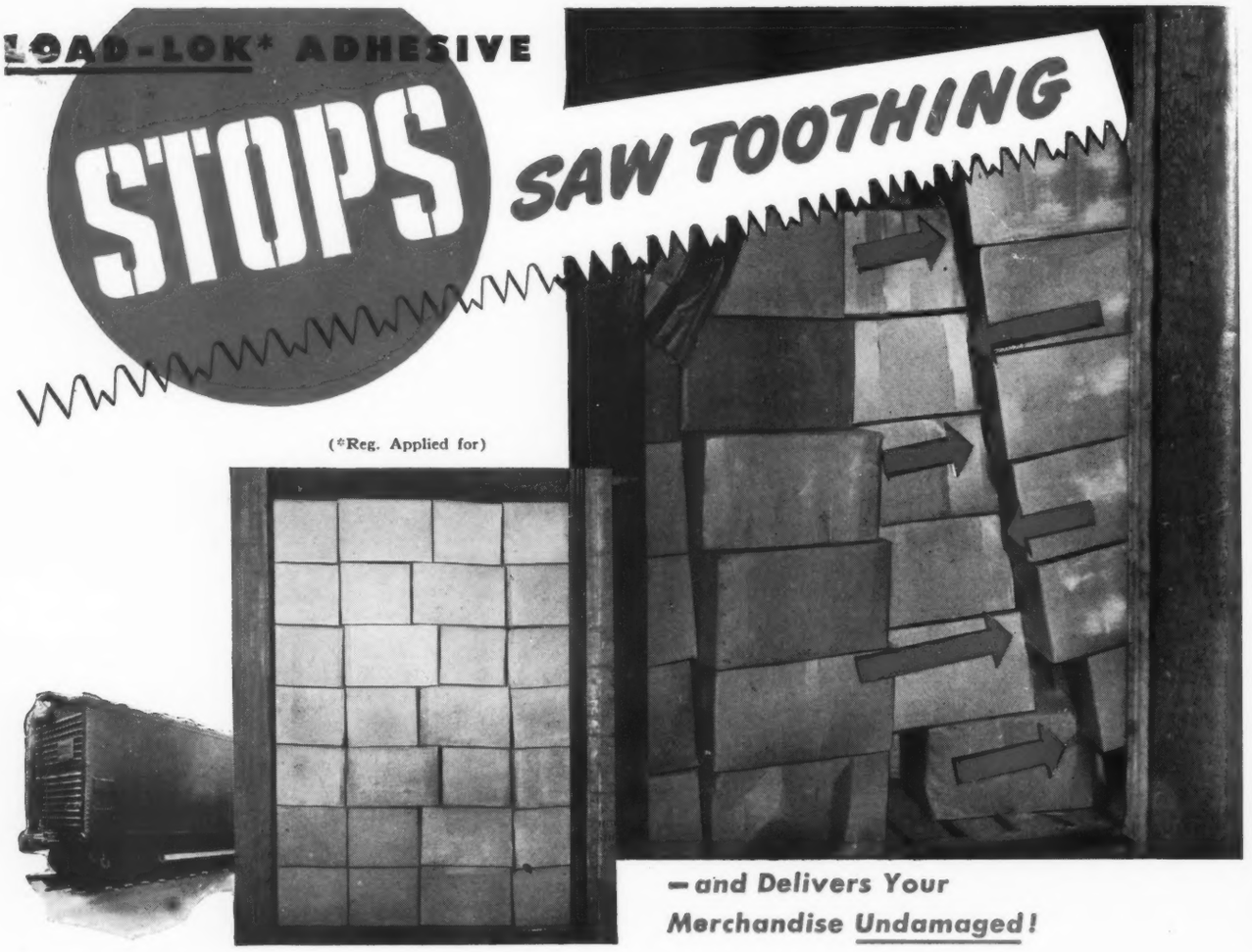
MODERN PACKAGING

April 1946



LOAD-LOK* ADHESIVE STOPS SAW TOOTHING

(*Reg. Applied for)



—and Delivers Your Merchandise Undamaged!

Study the *damaged* shipment photo carefully. Note the jagged carton edges. That's saw-toothing . . . caused by subjecting loose, unglued carloads to vertical oscillation, side sway and car movement shocks. Every carton damages another carton. Here's the proof: 1,116 cartons of canned food shipped from Mississippi to Michigan. Result? 1,102 cartons damaged. Shipment rejected at cold storage warehouse because of mold, odor risks.

Next, study the *undamaged* shipment photo. This shipment was properly unitized with LOAD-LOK Adhesive. Contents: 1,524 cartons of bottled brandy. Distance: California to New Jersey. Outturn Report: "No shifting of lading en transit. Entire load in general good order. No exceptions taken on delivery." That means no breakage . . . clean, safe handling merchandise that'll display well, sell well!

LOAD-LOK is a special National adhesive. It *unitizes* the loading of canned goods, light bulbs, china, bottled goods and all other fragile or crushable materials — in cartons, boxes, bags. Carload and truckload shipments are *unitized* into floating *glued* loads that successfully withstand all shipping stresses and greatly reduce dunnage and bracing costs.

LOAD-LOK is automatically applied in two parallel strips to the bottom surface of each shipping unit . . . which is then lifted off the regular loading conveyor and glued into the *unitized* load. LOAD-LOK has a high shear strength which prevents sidewise or lengthwise shifting of the stowed units. Yet, a single sharp upward blow of the hands, against its low tensile strength, releases each unit for easy unloading. The glue cost is insignificant. And the only equipment required is an inexpensive glue pan installation on your loading conveyor.

LOAD-LOK has been endorsed by leading carriers. Full details are available in a new handbook: GLUED LOADS. Write for your copy —NOW! Offices: 270 Madison Ave., New York 16; 3641 So. Washtenaw Ave., Chicago 32; 735 Battery St., San Francisco 11; and other principal cities. In Canada: Meredith, Simmons & Co., Ltd., Toronto. In England: National Adhesives, Ltd., Slough.

ARMY (E) NAVY

Dunellen Plant

National ADHESIVES

EVERY TYPE OF ADHESIVE FOR EVERY INDUSTRIAL USE

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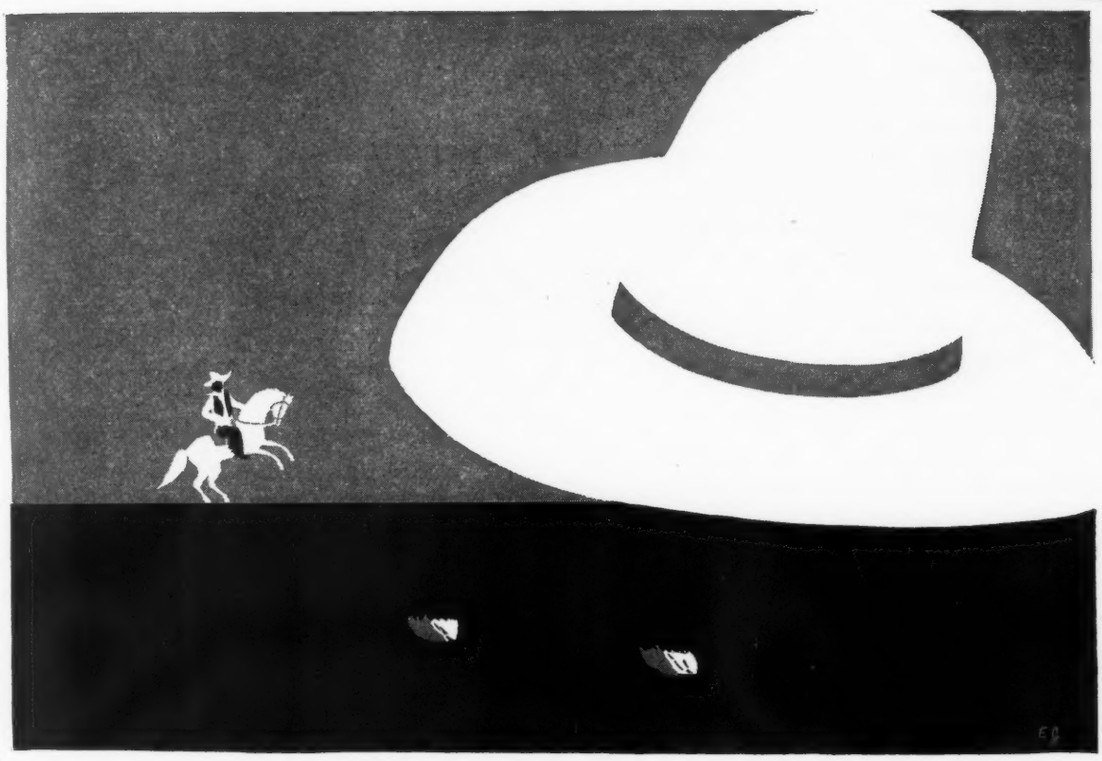

PRACTICAL

USAGE—rather than verbiage—is the real measure of a practical cap. On the job, as well as on paper, the practical cap is an efficient closure for a wide variety of products and packages. It is adapted to high-speed, low-speed or any-speed production. It is a safe, sure seal during the jolt and jostle of shipment. And it is a positive reseal until the last measure of product is used. Such a cap is truly practical. Such a cap, too, is the Phoenix C T; proved practical—not by say-so—but by a quarter of a century of actual, everyday use. Only a practical cap could be so used for so long.

Top wear for glassware

PHOENIX METAL CAP CO., CHICAGO 8 AND BROOKLYN 18

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MODERN PACKAGING

VOLUME 19 — APRIL 1946 — NUMBER 8

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Special

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A complete report on proceedings at A.M.A. meeting

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COVER—Textiles—cotton and burlap—are mong the oldest of packaging materials. Textile bags carry a tremendous portion of the world's staple goods—flour, seeds, feed, vegetables, fruits. This month's cover by Peter Piening symbolizes the botanical origin of textile fibres and the weaving of them into cloth.

OLEOMARGARINE

a problem to handle

is safely wrapped

and cartoned on-

● Oleomargarine is hard to handle because it is soft when packaged and the individual prints tend to stick together when fed into the machine. Oleomargarine, a mixture of oil, salt and milk, is a product very injurious to ordinary types of metal. *All* milk contains lactic acid and of course this acid, in conjunction with salt and the natural acids contained in the oils is very detrimental to ordinary equipment.

Hygenic protection of this widely used food product, against contamination, is a "*must.*" Machine parts must definitely resist corrosion and must be easily accessible for cleaning.

A quarter of a century of experience in packaging oleomargarine is built into Redington equipment. Easy-to-remove and easily cleaned wood parts carry the oleomargarine into the machine. Stainless steel and nickel alloy prevent corrosion.

The operation is *simple.* Prints are fed by intake conveyor . . . wrappers are fed . . . . perforated with date in code . . . the prints wrapped. *Next,* cartons are fed and formed . . . color packets are automatically dropped into carton . . . the wrapped print inserted . . . and the carton is closed by tucking in the end flaps. An important safeguard is the automatic stop should color packet fail to feed.

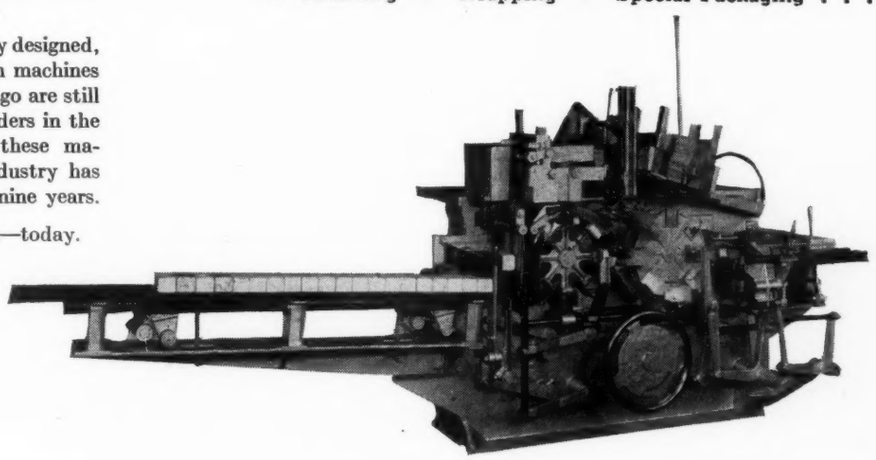
A rugged, high speed, properly designed, well built machine. Redington machines built more than twenty years ago are still in operation. That is why leaders in the oleomargarine industry pick these machines . . . why American industry has looked to Redington for forty-nine years.

Write us about *your* problem—today.

REDINGTON

PACKAGING MACHINES

F. B. REDINGTON CO. (Est. 1897) 110-112 So. Sangamon St., Chicago 7, Ill. • REDINGTON PACKAGING MACHINES for Cartoning • Wrapping • Special Packaging . . .



Another Good Thought

PASSED ALONG . . .

Let us not pray for Lighter Burdens, but for STRONGER BACKS . . . .

THEODORE ROOSEVELT

KVP

MAKERS OF

FOOD PROTECTION PAPERS

★

GENUINE VEGETABLE PARCHMENT
SPECIAL TREATED . .
GREASEPROOF . .
WAXED . .

"THE WORLD'S MODEL PAPER MILL"

KALAMAZOO VEGETABLE PARCHMENT COMPANY

. . .

PARCHMENT . KALAMAZOO 99 . MICH.

BRANCH PLANTS IN HOUSTON, TEXAS AND PHILADELPHIA, PENNSYLVANIA

Now it's fly swatters made from Geon ...

. . . What will they think of next?

AN enterprising mid-Westerner had heard about GEON raw materials and the many things that could be made from them. So, he asked himself, why not fly swatters? Products made from GEON, he knew, resist oils and chemicals, sunlight, aging, repeated impact, abrasion, and many other normally destructive factors. They keep their shape indefinitely. They can be brilliantly or delicately colored. They can be waterproof and, so, easily washed. And GEON can be compression molded or injection molded, extruded, calendered or cast into sheet and film.

Samples were made and tested. The initial order was for 300,000 swatters, called Odor-Swat, the King of Swats, made from GEON. These swatters are going to make a good many impressions—on unsuspecting flies—this summer and for years to come.

It may seem a far cry from fly swatters to delicate film for the packaging field—or from dainty make-up capes to linings for acid tanks—from car upholstery material to insulation for wire and cable. But that's the way GEON is; versatile, easy to process, with applications—established and potential—*in literally every field.*

For more information about GEON raw materials and what can be done with them please write Department L-4, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. In Canada: Kitchener, Ontario.

Geon
Polyvinyl Materials

Here are a few applications for GEON suggested by the unusual properties of the fly swatter

Textile coatings for rainwear, awnings, industrial aprons.
Calendered, embossed sheet for upholstery and luggage.
Calendered or molded sheet for flooring, shoe soles, shower mats.
Paper coatings or film for packaging, wall covering.
Extruded wire and cable insulation.

Photo courtesy The Odor-Swat Co., Brecksville, Ohio

B. F. Goodrich Chemical Company

A DIVISION OF
THE B. F. GOODRICH COMPANY

PACKAGES BY MILPRINT

TODAY'S *Merchandising Trends**

1. *self-service*
2. *convenience*
3. *brand emphasis*
4. *protection*
5. *informative labeling*

* *Based on authoritative surveys of both consumer and retailer preferences.*

HELP *Sell* YOUR PRODUCT

A complete and accurate story of your product in clear, sales language, is an integral part of good package design — requiring the special talents of men experienced in merchandising and design, such as the men who create your Milprint package.

MILPRINT Inc.

PACKAGING CONVERTERS • PRINTERS • LITHOGRAPHERS

plants at Milwaukee, Philadelphia, Los Angeles, Tucson and San Francisco

PACKAGING HEADQUARTERS TO AMERICAN INDUSTRY

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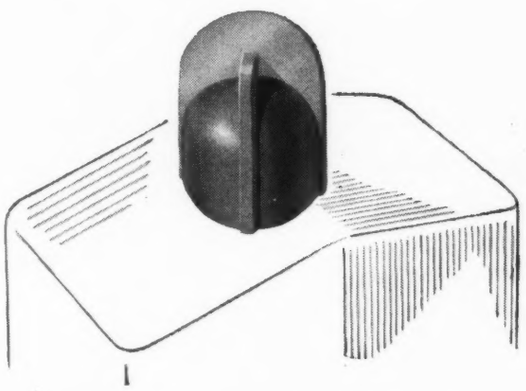
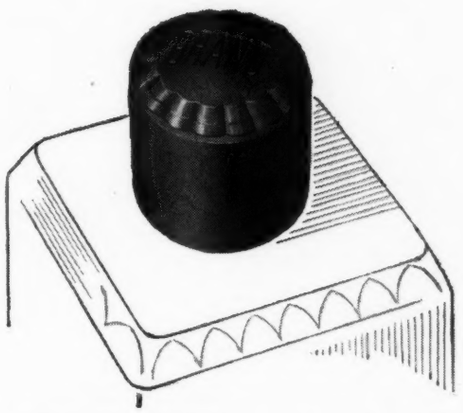
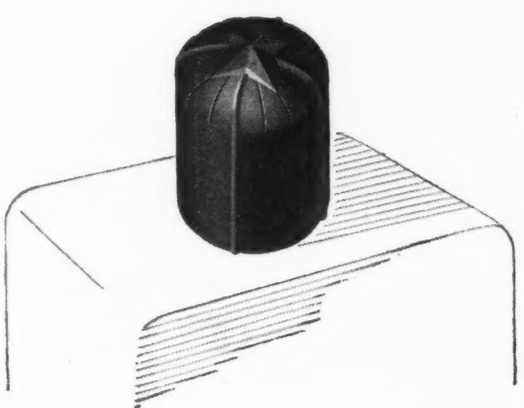
SMART STYLE HINTS FOR YOUR PRIVATE MOLD CAPS



APPEAL of this modern Artmold Cap design lies in its functional simplicity. Clean-cut, distinctive, it makes your package look taller, aids product identification.



YOUR BRAND NAME or trade-mark can be set against your own choice of background, depressed and filled in with color, to give your package competitive eye-appeal.



MATCH THE PERSONALITY of your package with a custom-tailored cameo Artmold Cap Design. It will add sales-building style and distinction to your "luxury trade" products.

DECORATIVE possibilities with Artmold Caps are unlimited. Use them to give your package that "extra touch" of style and beauty that sets it apart from competitors.

ARMSTRONG'S *Artmold* PLASTIC **CAPS**

SUCCESSFUL SELLING today demands distinctive packages. Put your package out front in style, beauty, and distinction with Armstrong's Artmold Cap. Get free design suggestions today. Simply send drawing or sample of your package to Armstrong Cork Co., Glass and Closure Division, 5904 Prince St., Lancaster, Pa.

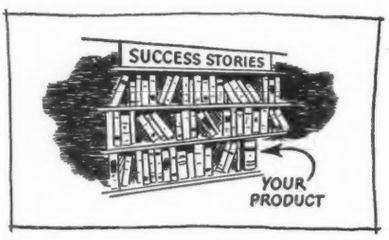
Will haircuts in tubes be next?

Laugh if you like, but no one ever thought of packaging shampoo in a tube for general use, either. No one, that is, until Raymond Laboratories of St. Paul introduced Rayve, their new cream shampoo, with results that have folks singin' in the shower. Listen:

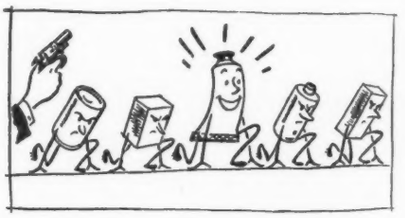
Sales figures (our favorite kind) show that consumers like the economy of being able to measure *exact* amounts of shampoo, instead of the wasteful drop-and-drip application associated with liquids. They like not having to grope for slippery bottles or worry about broken glass. They like, in short, the greater all 'round convenience and compactness of Rayve in its specially designed Sun Tube—in fact, they like it so well that they've bought millions of tubes in little more than a year! A rather amazing record, don't you think, for a new product in a highly competitive field?

Packaging Problems in *Your* Hair?

...Then remember that Rayve's success story has many sequels—that new developments have made Sun Tubes the more economical, attractive container for a host of products never before considered prospects for a tube. Is *your* product among them?

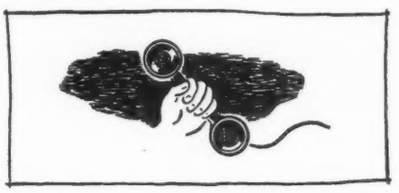


Remember, too, that Sun Tube engineers and designers will study your *individual* requirements . . .



and bring to bear all the ingenuity and resourcefulness that assures your product perfect packaging.

And perfect packaging, in the dead-earnest race for markets that is only just beginning, may prove to be a decisive factor!



For information or advice, phone or write Sun Tube's main office, 181 Long Ave., Hillside, N. J., or our representative nearest you.

Sun Tube Corporation

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This fine coated paper is notable for its many uses. The smooth surface lends itself to fine design and colorful printing. Brightness and glistening finish provide attention value in package wraps for jewelry, pen and pencil sets, toiletries, confections, cosmetics, lingerie, linens and other quality goods. It's a favorite, too, for unusual printing effects in menus, inserts, folders, labels, covers, programs, post cards and calendars, and prints equally well by letterpress and offset lithography. Here's a chance to do something different. Use Champion Kromekote for your next fine job.

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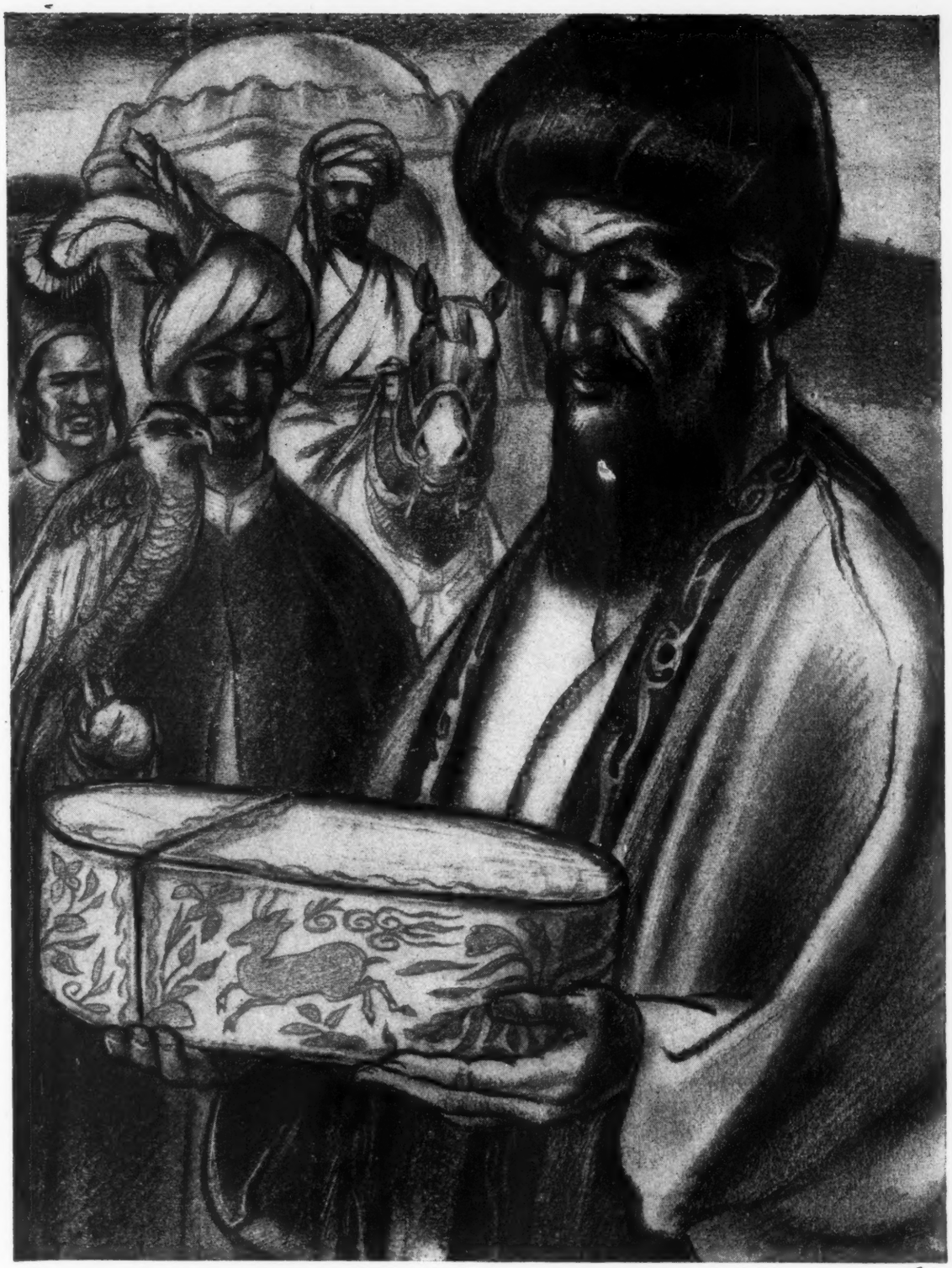
THIS IS NUMBER FOUR IN A SERIES ILLUSTRATING THE HISTORY OF PAPERBOARD AND FOLDING CARTONS



PAPERBOARD WAS PRECIOUS IN ANCIENT PERSIA

Paperboard was produced in Persia as early as the Ninth Century A.D. It was made by hand and highly regarded as a material—so highly, in fact, that cherished hunting falcons were buried in coffins made of paperboard. • In the Paper Museum of the Massachusetts Institute of Technology there is such a coffin, beautifully decorated and in perfect condition. It is reported to be more than one thousand years old. Today, paperboard folding cartons are used as the most effective and most economical means for bringing your product to the consumer.

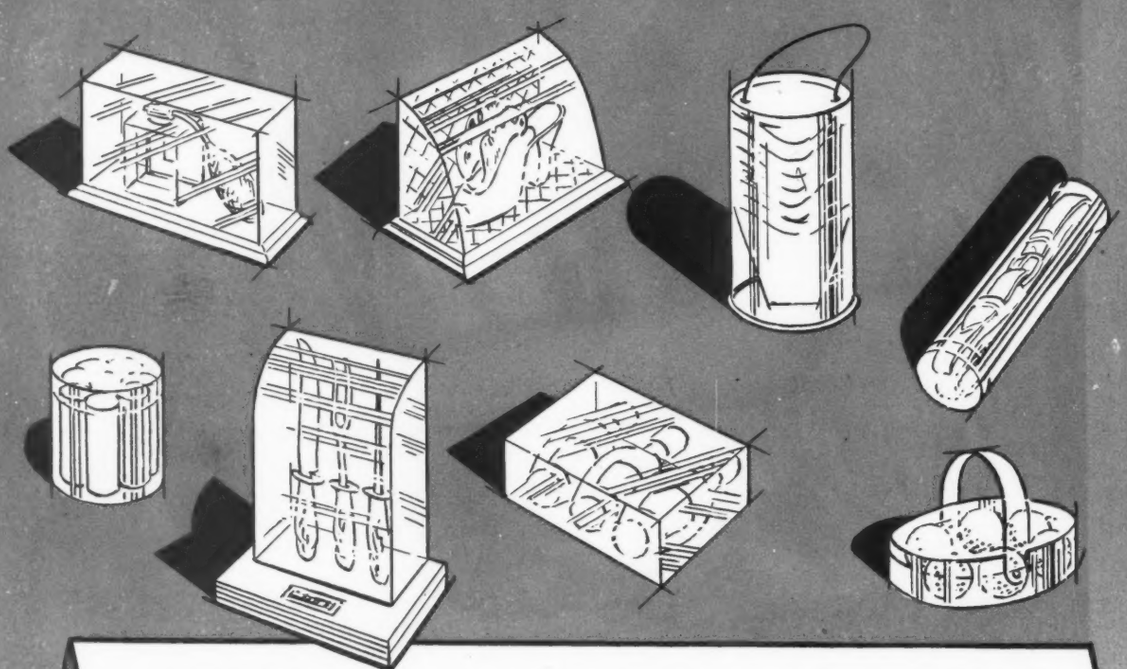
UNITED PAPERBOARD COMPANY, INC.
PAPERBOARD FOLDING CARTONS
285 MADISON AVENUE NEW YORK 17, N. Y.

TO BE SEEN
IS
TO BE SOLD!

Put your product in visible, transparent Shaw-Randall packages . . . packages that tell the customer, "You'd better look into this."

Shaw-Randall's experience in creating and fabricating acetate containers of many kinds is at YOUR product's service. Shaw-Randall packages win prizes from the judges . . . win loyal acceptance from the public.

Let us submit ideas in acetate for your product.



SHAW-RANDALL HAS HIGHLY SPECIALIZED FACILITIES FOR CREATING and PRODUCING

ACETATE PACKAGES ★ LEAD FOIL POUCHES

DIE-CUT CONTAINERS

ALSO DIE CUTTING AND ASSEMBLY

of all types of paper products including newsboard and special laminated papers.

SHAW-RANDALL CO.

A DIVISION OF THE SHAW PAPER BOX COMPANY · PAWTUCKET · R · I ·

NEW YORK SALES REPRESENTATIVE — FRED MANN & CO., 545 FIFTH AVENUE

BOSTON SALES AGENCY — H. B. W. SNELLING, 53 STATE STREET

Give Your Products the Seal of Approval

WITH

Anchor T Caps

PACKAGES sealed with Anchor T Caps have had the housewife's approval for many years. She has purchased many of her favorite jellies, jams, preserves, meats, pickles, mustard and other products in tumblers sealed with Anchor T Caps. She recognizes their dependability and likes them because they are easy to remove and reseal.

Attractive and efficient, Anchor T Caps provide positive, permanent seals and give complete protection for products packed in thin pressed, thin blown, flared, wide flared or bead finished tumblers.

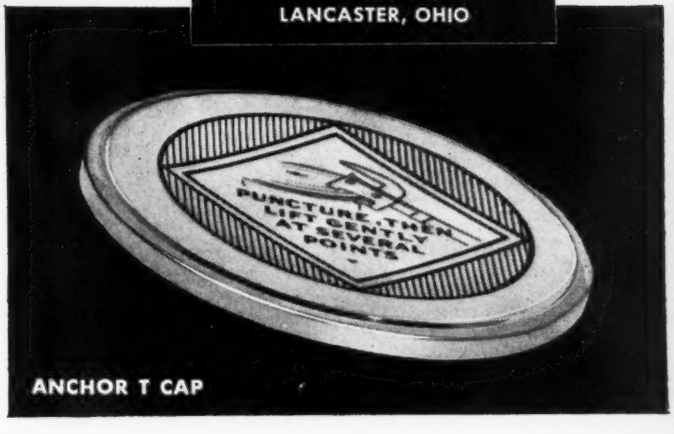
The mechanically formed side seal effectively overcomes all top edge imperfections peculiar to thin blown tumblers and holds caps in place, with or without vacuum. Like the hoops on a barrel, Anchor T Caps give added strength to thin wall containers.

You give your products the seal of approval when you seal them with Anchor T Caps.

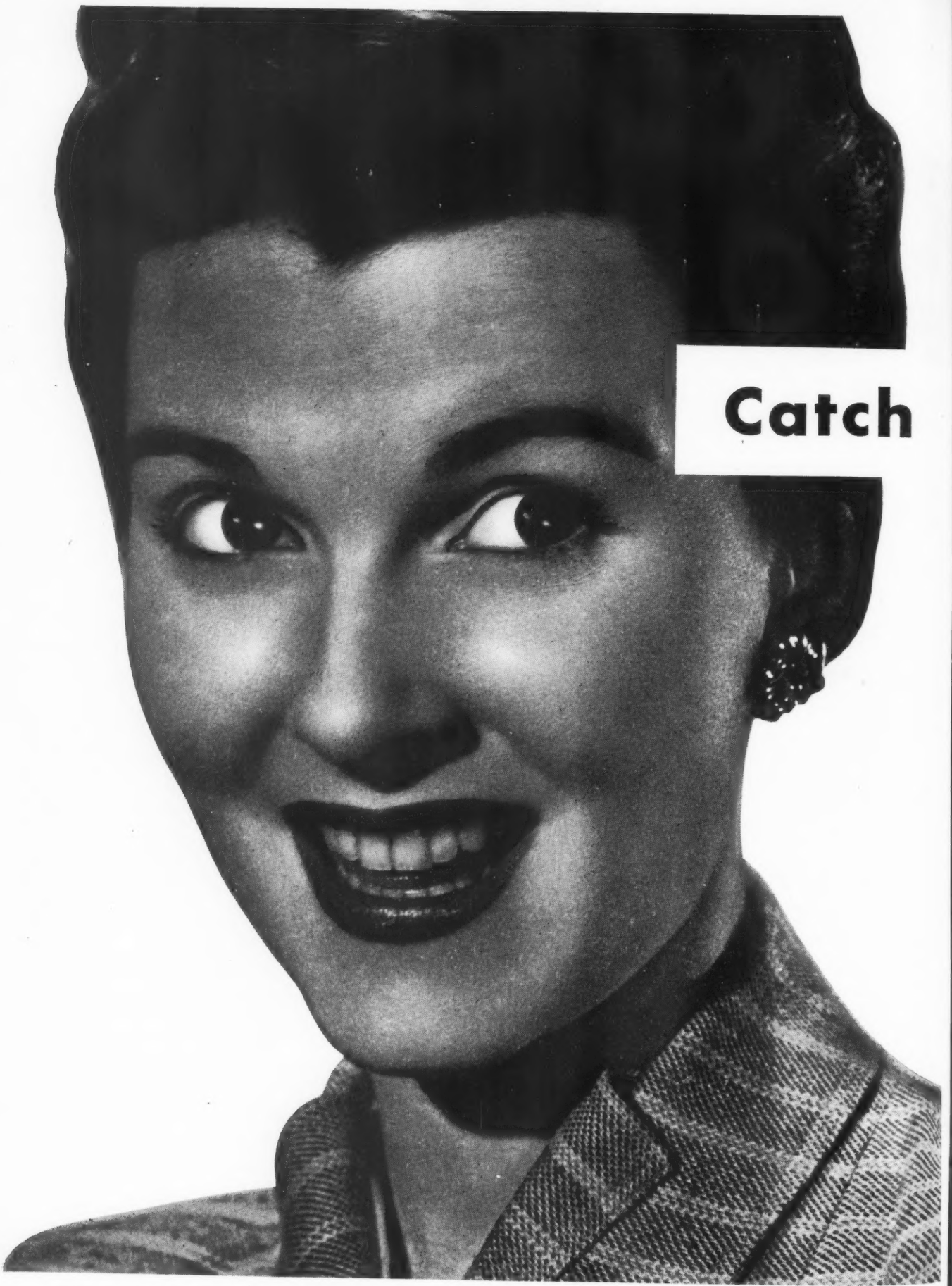
HOBBY LOBBY
CBS NETWORK .. THURS. EVE.

Anchor
CONTAINERS and CAPS

PRODUCTS OF
ANCHOR HOCKING GLASS CORPORATION
LANCASTER, OHIO

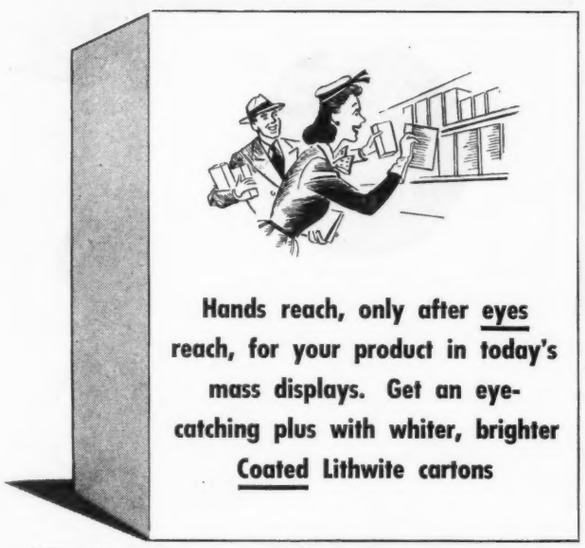


ANCHOR T CAP


Catch

you seal them with Anchor T Caps.

more eyes... AND YOU'LL CATCH MORE CUSTOMERS


Hands reach, only after eyes reach, for your product in today's mass displays. Get an eye-catching plus with whiter, brighter Coated Lithwite cartons

WHAT IS IT that draws more shoppers' eyes to *Coated* Lithwite cartons . . . in modern, mass counter and shelf displays? *Coated* Lithwite is whiter, brighter. The smooth, velvety . . . chalk-free surface of this revolutionary new paperboard is a perfect base for printing inks . . . brings colors up sharply . . . reproduces pictures with compelling, life-like realism.

Proved and improved for 7 years. *Coated* Lithwite is the sensational paperboard that is formed, made and coated in one high-speed operation. Used, today, to package many of America's most famous products.

Smoother packaging production. Fewer "jammers" and "leakers" with *Coated* Lithwite cartons. Accurate folding without shattering or flaking. And *Coated* Lithwite takes a tight, positive seal. While production is currently sold up, now is a good time to discuss future carton needs with your Gardner-Richardson representative.

More eyes reach for your product in

Coated Lithwite Cartons

The GARDNER-RICHARDSON Co. • Manufacturers of Folding Cartons and Boxboard • Middletown, Ohio

Sales Representatives in Principal Cities: Philadelphia • Cleveland • Chicago • St. Louis • New York • Boston • Pittsburgh • Detroit

to protect popcorn

It's SYLVANIA for Cellophane!

...and pie

BEAUTIFUL, YES! But Sylvania Cellophane offers much more than beauty to the products it packages. This shimmering wrap protects against air, dust and moisture... seals flavor and freshness in... keeps candy, pastries, frozen meat, cigarettes and many other products in tip-top condition.

Today's Sylvania Cellophane not only looks better than ever before, but it offers broader, functional qualities, too. As time goes on you can expect even larger quantities to be made available for an even greater variety of packaged products.

...and ham-on-rye!

SYLVANIA CELLOPHANE

Made only by SYLVANIA INDUSTRIAL Corporation

Manufacturers of cellophane and other cellulose products since 1929

General Sales Office: 122 E. 42nd St., New York 17, N.Y. ★ *Plant and Principal Office:* Fredericksburg, Va.

SYLVANIA CELLOPHANE

•Registered Trade Mark

When American women—who buy ¾ of all goods sold at retail—enter a store—surveys show that they make ¾ of all their buying decisions *right there*—acting on impulse—selecting from articles they SEE!

There—your packaged product, among competing packaged products, must attract their attention.

Never Underestimate the Power of the Package

Never forget that women *do* buy on impulse. The package that attracts the eye, arouses interest—and makes a better impression of quality within than the others—WINS SALES.

LET RITCHIE WORK WITH YOU to develop a better package at low unit cost. One that will instantly identify, fully protect and conveniently dispense your product — practical — production-planned—easy to fill or pack—to handle, to stack and display—but *above all* designed for eye-appeal, for quality impression—A PACKAGE THAT SELLS!

Never the Power

W. C. Ritchie and COMPANY
8843 Baltimore Avenue • Chicago 17
★ SET-UP PAPER BOXES
★ FIBRE CANS
★ TRANSPARENT PACKAGES

Underestimate of the Package!

COPYRIGHT 1945, W. C. RITCHIE & CO.

NEW YORK • DETROIT • LOS ANGELES • ST. LOUIS • MINNEAPOLIS • MILWAUKEE • ATLANTA • NEW ORLEANS • DENVER • PORTLAND • SEATTLE • MIAMI

Screw-Valve Closure?

...Another Reason for CEL-O-SEAL

REG. U. S. PAT. OFF.

IF THE CLOSURE of this container comes loose, the contents literally go up in thin air! A Du Pont "Cel-O-Seal" band provides positive protection for this aerosol dispenser which contains a powerful insecticide in solution with a liquid, "Freon," under pressure.

The "Cel-O-Seal" band seals the screw-valve in place . . . prevents it from opening in transit or by tampering. And "Cel-O-Seal" adds an extra dash of brilliance to these colorful containers, designed for modern consumer appeal.

It will pay you to investigate the all-round advantages of "Cel-O-Seal" cellulose bands. They yield dividends in protection . . . and profits in merchandising advantages. "Cel-O-Seal" bands are manufactured by E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Delaware. They are also sold by Armstrong Cork Co., Lancaster, Pennsylvania, and I. F. Schnier Co., San Francisco, California

DU PONT "CEL-O-SEAL" BANDS

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

OVER the TEA CUPS—

"What a Smart Way to Package Tea"

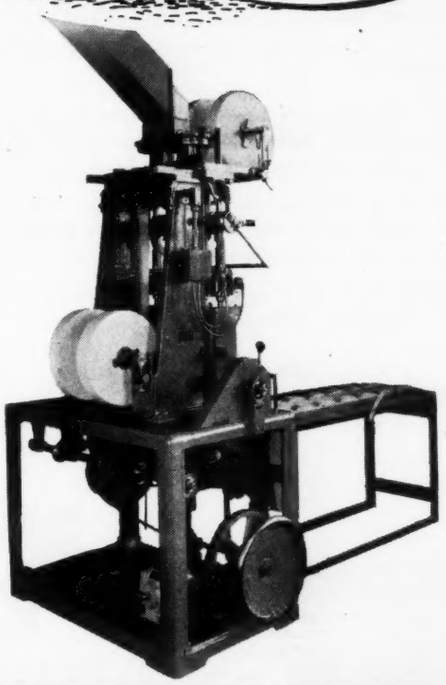
Imagine individual tea packets heat-sealed instead of sewed, in fast brewing porous paper that makes a crystal clear cup of tea without siftings even when filled with finely cut tea. They are neat and attractive, produced at high speed and very low cost.

That exactly describes the new convenient tea bag, turned out at the rate of 100 or more per minute on an adaptation of the S & S Transwrap Machine.

Using rolls of tough, porous, heat-sealing paper of high wet strength, especially adapted for the purpose, the tea bags are formed, filled, heat-sealed and stacked in piles of eight, ten or other desired count on a conveyor belt, so that just one packer can easily carton the entire production of the machine.

This process requires only minimum material, time and labor and is a typical S & S Transwrap job. The Transwrap Machine can be used for many other products, using other heat sealing films —Cellophane, Pliofilm, foil, etc.—from the roll, with various types of feeding mechanisms to suit different products.

There is an S & S machine for packaging your product rapidly and at low cost. Call Stokes & Smith Co. for engineering consultation at any time . . . there's no obligation.



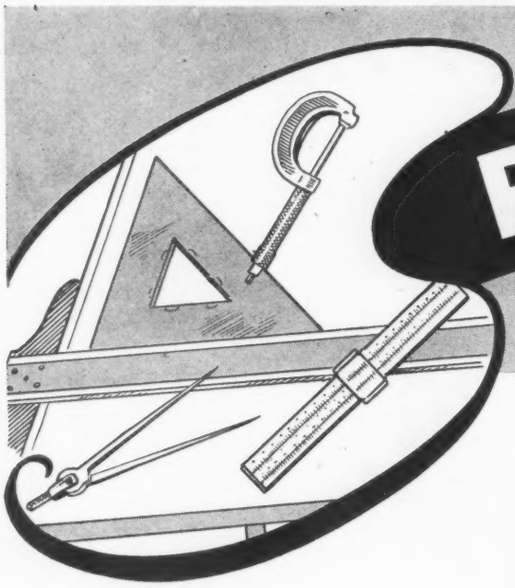
STOKES & SMITH Co

FRANKFORD, PHILADELPHIA 24, PENNA.

FILLING · PACKAGING · WRAPPING MACHINES

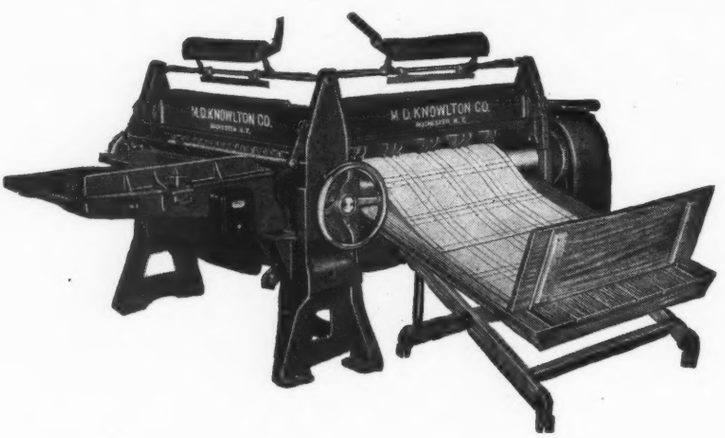
Speeds to suit your needs—15-30-60-120 per minute

"Better machines for better packages"



PRECISION *Scoring*

...that's the ingredient that makes boxes strong



Check these superiorities. They tell the story of accuracy and uniformity of scoring.

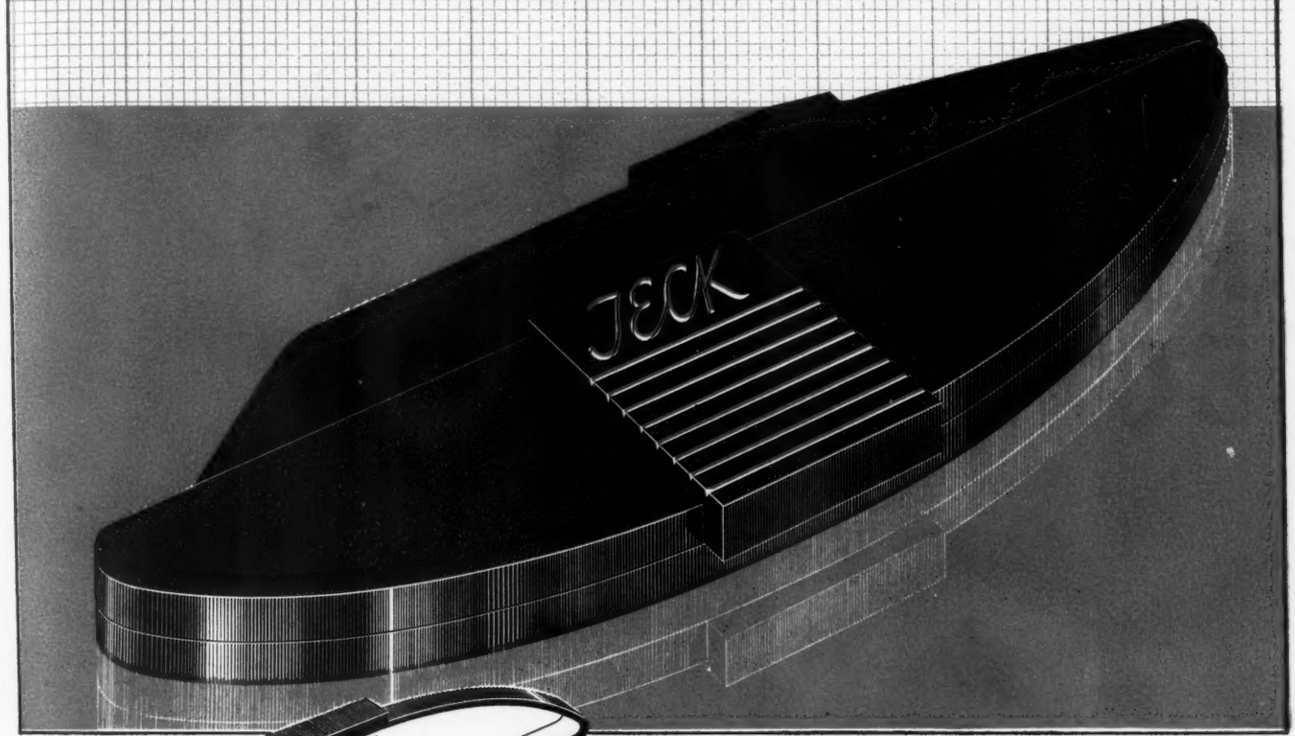
1. Weights have been distributed by the excellent design of the rugged base and extra-heavy reversible knife bars.
2. Large 9" diameter scoring rolls, with their trunnions (shafts) cast integral, are set in Timken Roller Bearings.
3. Independent adjustable feed control equalizes sheet pull.

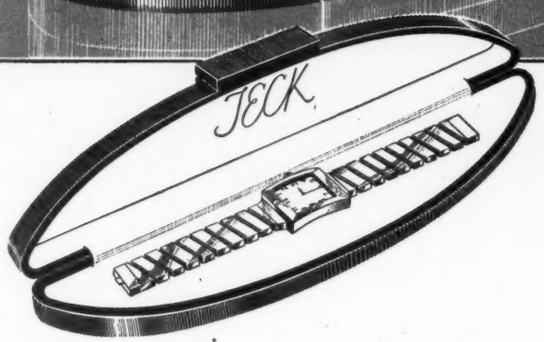
For complete details of this precision machine, send for Bulletin No. 94.

KNOWLTON HIGH SPEED DOUBLE SCORER

FOR BOXES that must take hard use and much abuse, use the Knowlton High Speed Double Scorer to get the precision that makes boxes strong. It's as accurate as a die—faster, easier to operate. It puts precision production on a mass production basis. Engineered for mechanical perfection plus many features and refinements. Get the full facts. Your inquiry will bring complete information.

DESIGNED AT NO. 1 PLASTICS AVENUE





GENERAL ELECTRIC SUGGESTS PLASTICS PACKAGING

to present the precision of a fine watch

PRECISION-MOLDED in plastics, this case would compliment the precision craftsmanship of any watchmaker. It's just one of many forward-looking designs for better merchandising to be found at No. 1 Plastics Avenue.

Whatever your product may be, consult General Electric's *complete* plastics service for today's finest custom packaging in plastics.

G-E designers, who know modern trends in packaging because they help to make them, will be glad to help you . . . submit original designs for your consideration . . . or consult with you on your own designs. Their experience in creating plastics packages—many of them prize winners—will be invaluable.

Of course, any mold made for you by skilled G-E craftsmen faithfully reproduces your custom design. General Electric uses all plastics materials and will help you select the one best suited to your packaging needs.

Why not talk to us about plastics for custom packaging? For an appointment, write to Plastics Divisions, General Electric Company, 1 Plastics Avenue, Pittsfield, Massachusetts.

GENERAL ELECTRIC

CD46-P2

EVERYTHING IN PLASTICS

"Yes, madam, you can see all the fine points right through the plastic container!"

And whatever your product, we can make an attractive plastic cover that will push its sale. In addition, Plastics protects while selling. Dust-proof and dirt-proof, it displays the item while keeping it as fresh and clean as the day it was shipped from the factory.

Consult National Transparent Plastics Company to help modernize your packaging. Their wide experience in plastics, their knowledge of packaging design and construction is your assurance of the "tops" in modern packaging . . . *Use Plastics to sell.*

NATIONAL TRANSPARENT PLASTICS COMPANY

SPRINGFIELD **MASSACHUSETTS**

Why? Because chewing gum manufacturers learned during the war, when they had to get along *without* aluminum foil, that they definitely need this protective wrapper...

FOR FRESHNESS

With Alcoa Aluminum Foil in their packages, flavoring and moisture content are held in more securely. Gum reaches chewers with more of its original goodness intact.

FOR FRESHNESS...

Use Alcoa Aluminum Foil to protect *your* product. This can be done in many different and effective ways. Talk to your package supplier about the best method of incorporating this superior protective sheet in your package.

If you would like names of package suppliers experienced in producing Alcoa Foil packages, call the nearest Alcoa sales office or write ALUMINUM COMPANY OF AMERICA, 2129 Gulf Building, Pittsburgh 19, Penna.

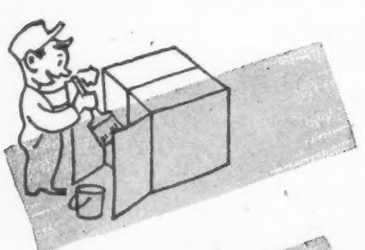
ALCOA ALUMINUM FOIL

USE THIS YARDSTICK

SF RATING!

TO FIND THE VALUE OF YOUR ADHESIVES!

LET FINDLEY'S STEP-UP YOUR ADHESIVE SERVICE FACTOR

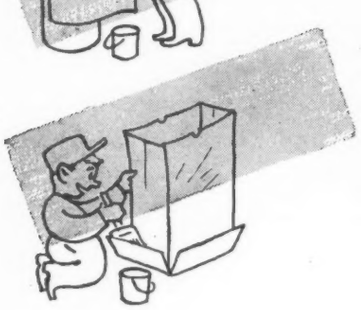


PACKAGING

There's a Findley Adhesive for every packaging purpose: Sealing of shipping containers, cartons and bags, wrapping of cartons and individual units.

LABELING

Findley's adhesives will solve your problems: Formulated for use on glass, fibre, metal, wood and transparent films. Adapted to both high speed machine and hand application.



PAPER CONVERTING

Findley's Adhesives are designed to meet your requirements in all fabricating operations: Laminating, combining and mounting; and manufacture of cartons, bags, tubes, cans, envelopes and specialities.

Obviously, the adhesive *you* want is one with the highest possible Service Factor rating — one that performs the greatest amount of useful work in terms of continuous, dependable production . . . one that minimizes and eliminates losses from rejects, slowdowns and shutdowns of the production line due to adhesive failures.

Findley's Industrial Adhesives are formulated with the Service Factor as a guide. They are first tested in our own laboratory for performance and dependability under the conditions they may be expected to encounter in your own plant. That's why every pound or gallon or drum of adhesive that leaves the Findley plant carries the maximum SF Rating.

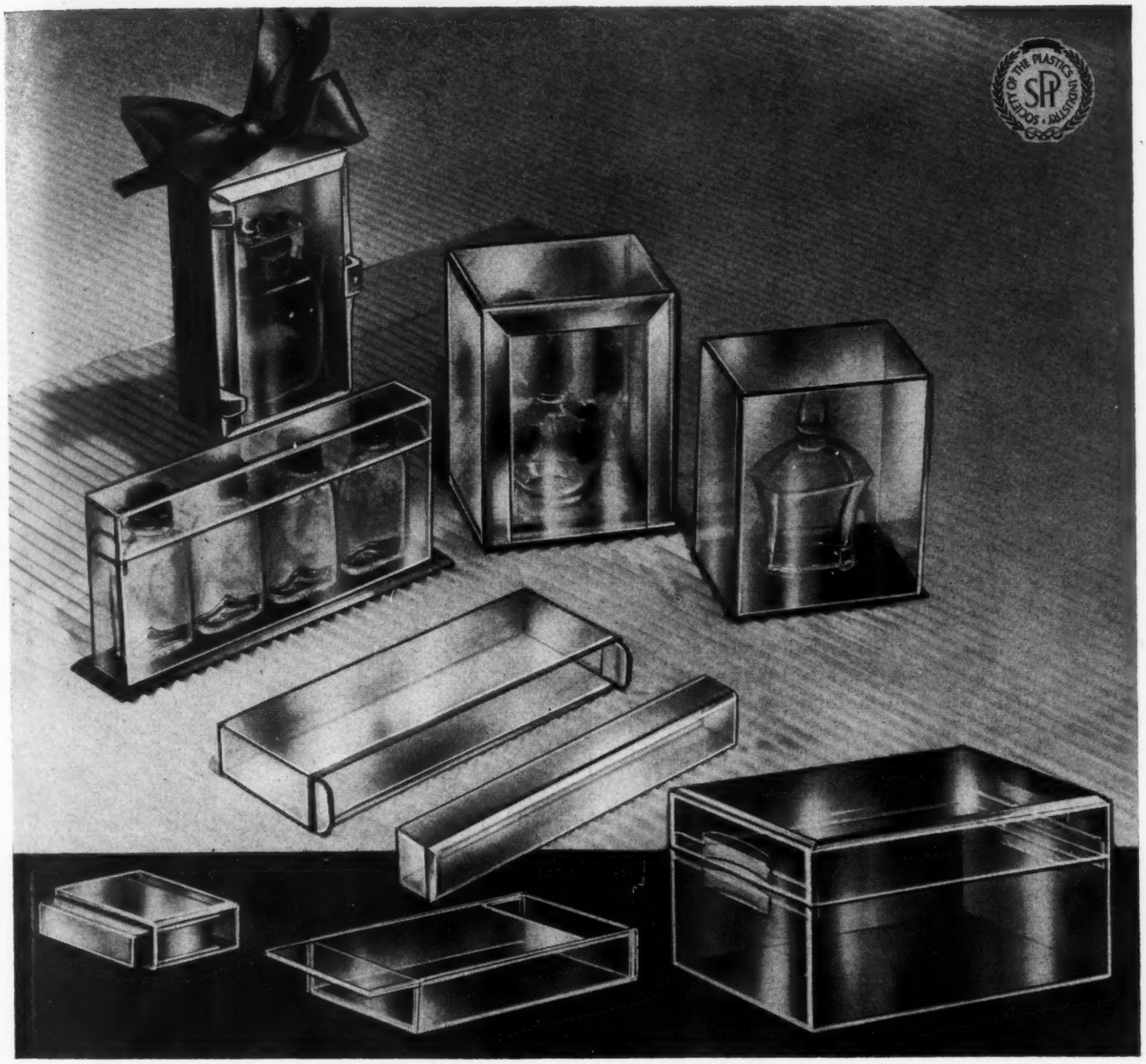
FINDLEY'S TECHNICAL SERVICE

Our technical facilities and personnel are available and ready to make *your* problem *our* problem until a satisfactory solution is found. If a specially compounded adhesive is indicated, it will be specifically formulated to meet your requirements.

The F. G. FINDLEY COMPANY

3045 W. PEMBERTON AVENUE
MILWAUKEE 10, WISCONSIN

Findley's
INDUSTRIAL ADHESIVES
Exclusively



PACKAGES THAT WERE WORTH WAITING FOR - EXCLUSIVELY YOURS

FOR FOUR LONG YEARS, you have waited for a fresh packaging idea conceived to meet the coming competition. Here it is, now, presented by the young, imaginative BLUE RIVER plastic designers.

THE NEW BLUE RIVER All-In-One packages are custom created and exclusively designed for your product. These distinctively different packages are powerful merchandising aids, and are also enjoyed by the consumer as an unusual household accessory.

EXCLUSIVE BLUE RIVER packages are created for every type of product. They are fabricated from Lucite or Plexiglass, fashioned crystal clear or in any color of the rainbow.

CALL OR WRITE TODAY for a consultation with a BLUE RIVER representative. He will explain how you can get your exclusively created package into immediate production.

BLUE RIVER PLASTICS MANUFACTURING CORPORATION

F. J. NUSSBAUM, Pres. 473 HUDSON AVENUE BROOKLYN 1, NEW YORK NEvins 8-2197

FABRICATORS AND DESIGNERS OF PLASTIC ORIGINALS

HOW SILVERSTITCHING BROKE A BOTTLENECK

"With expanded production of shower cabinets our carton making, using old fashioned methods, failed to keep pace. We installed Acme Silverstitchers and our packing soon drew ahead of requirements, shipments returned to schedule."

USE THE CLOSURE COMBINATION THAT

KEEPS PACE WITH PRODUCTION

SilverStitch REG. U.S. PAT. OFF. — STAPLING WIRE

- One-piece, continuous length, 5 and 10 pound coils . . . cuts threading time
- Galvanized to resist rust, corrosion
- Always uniform in width and gauge
- Makes stronger, surer closures than other methods . . . unaffected by weather

SilverStitchers REG. U.S. PAT. OFF. — STAPLING MACHINES

- Few moving parts . . . vital ones reversible . . . for lower maintenance costs
- Adjustable, single pedal control
- Operate easily, smoothly, quietly
- Heavy duty construction . . . low power consumption . . . for long thrifty service

Sealing Shipping Containers by Stitching is Faster, Stronger and More Economical

ACME STEEL COMPANY

NEW YORK 17 ATLANTA CHICAGO 8 LOS ANGELES 11

U. S. —The 48 States represent rich markets for properly packaged products.
Let us consult with you on your present package, for more efficient merchandising and possible economies.

CONTAINER CORPORATION OF AMERICA
Chicago, Illinois, and 23 other cities

SAVE WASTE PAPER

WAX-LAMINATED Papers Protect Longer

If your product requires sanitary and protective wrapping as a safeguard for oils, grease, fats, light and moisture-vapor, it will pay you to investigate Thilco WAX-LAMINATED Krafts, Greaseproofs and Glassines.

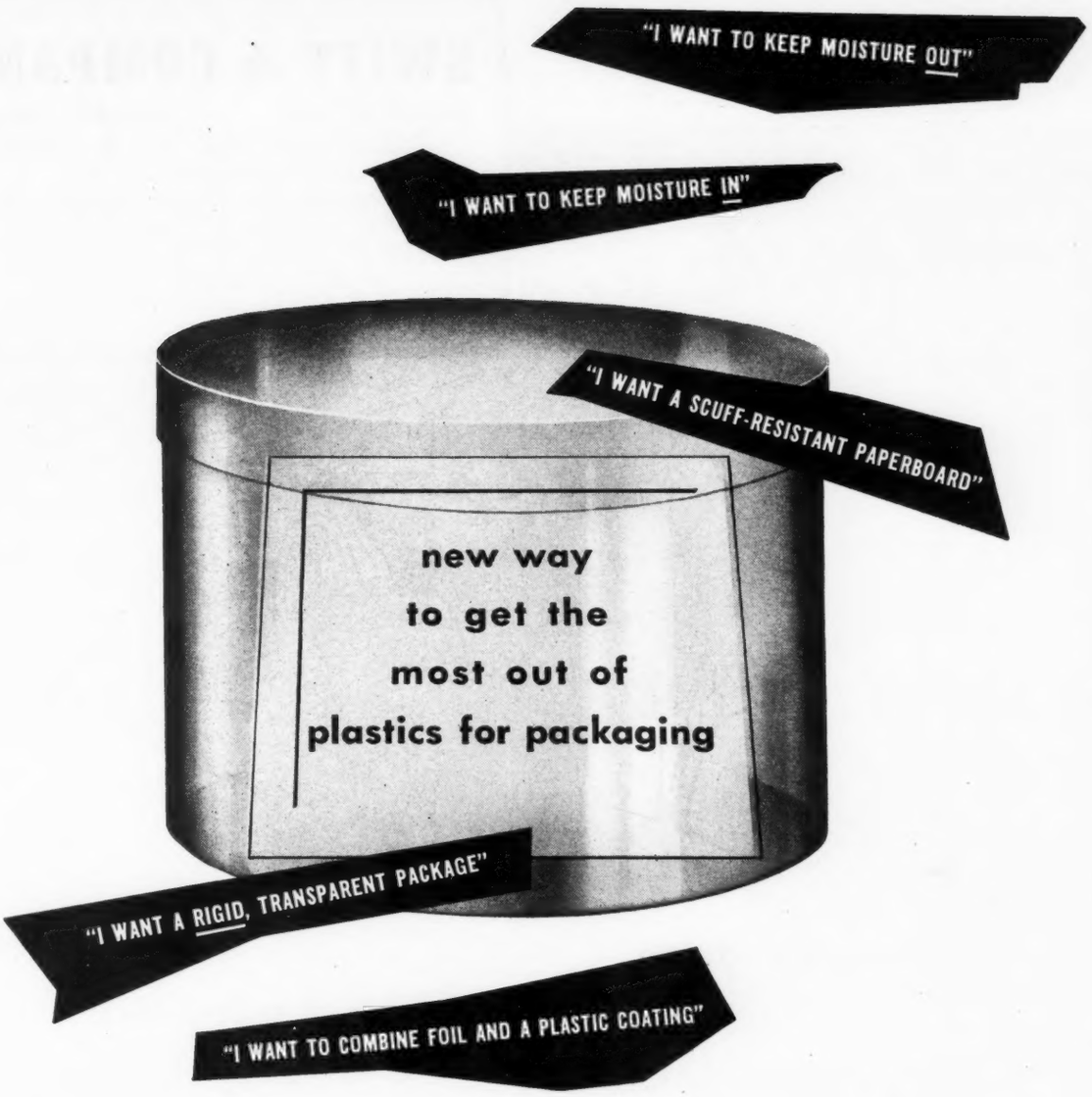
Odorless and tasteless, these papers help retain the same natural flavors in your product as when packed. And, because these papers are moisture-vapor-proof, they insure product freshness for the entire shelf life of your product. This is important to you, your jobber, retailer and ultimate consumer.

Thilmany's wax VAPOTITE papers can be "tailor-made" to your own specific requirements and furnished to you in numerous types, grades and weights either in sheets, bags, or carton and case liners. In addition, our design department and modern equipment can produce colorful, printed decorative or advertising effects.

For industrial use, as well as in food packaging, many of these papers are extensively used for wrapping machine parts to prevent corrosion.

THILCO *Functional* PAPERS

THILMANY
PULP & PAPER COMPANY
KAUKAUNA · WISCONSIN


"I WANT TO KEEP MOISTURE OUT"
"I WANT TO KEEP MOISTURE IN"
"I WANT A SCUFF-RESISTANT PAPERBOARD"
new way
to get the
most out of
plastics for packaging
"I WANT A RIGID, TRANSPARENT PACKAGE"
"I WANT TO COMBINE FOIL AND A PLASTIC COATING"

Never before has packaging been more vital to your sales than now. Never before has Monsanto been better equipped to help you create better selling packages... both decorative and functional.

That's why we have set up a new, separate department to serve the packaging field exclusively . . . a Packaging Department.

Have You a Problem?

If you are anxious to adapt to your packaging some of the new developments of wartime research, if you want to give your packages the stimulus of the better appearance and better performance that only plastics can give... use *this department as you would one of your own.* You'll get quick answers, straight answers, *correct* answers to your problems.

Technically equipped specialists in packaging are in charge. Practical experienced field men are prepared to work *directly* with individual packagers, their designers or technicians, on any problem relating to plastics. And behind them stands the entire Monsanto research organization... with all its technical experience, plus the practical "know how" gained in years of intimate service to packaging, to paper, to metals, to textiles... as well as to plastics molding and fabricating.

Here's the Answer

So put this new department to work for you. Get the most out of the qualities that both new and old Monsanto Plastics are prepared to deliver, especially if you're interested in any of those recently developed functional products.

- ... Hot melt heat sealing coatings and adhesives for (1) aluminum foil, (2) paper, (3) parchment paper, (4) glassine, (5) cellulose acetate
- ... Water emulsion coatings and adhesives
- ... Synthetic resins for applications to paper and paperboard for improved scuff resistance, water and moisture resistance.

Address all inquiries on packaging plastics to: MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield 2, Massachusetts.

The broad and versatile family of Monsanto Plastics include: Lustron* polystyrenes • Cerex* heat resistant thermoplastics • Vinyl acetals • Nitron* cellulose nitrates Fibestos* cellulose acetates • Thalid* for impression molding • Resinox* phenolics • Resimene* melamines. Forms in which they are supplied include: Sheets • Rods • Tubes Molding Compounds • Industrial Resins • Coating Compounds • Vuepak* rigid, transparent packaging materials.
*Reg. U. S. Pat. Off.

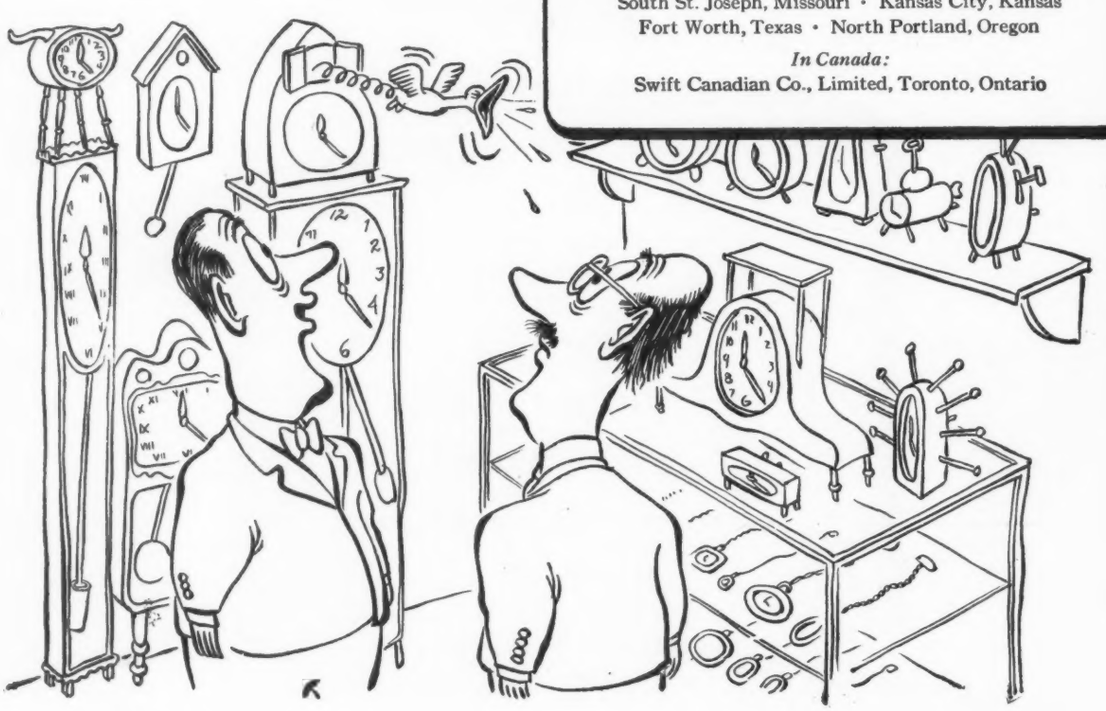
MONSANTO
PLASTICS
SERVING INDUSTRY . . . WHICH SERVES MANKIND

SWIFT & COMPANY

GLUE DEPARTMENT **CHICAGO 9, ILLINOIS**

Factories: Chicago, Illinois • Harrison, New Jersey
South San Francisco, California
East Cambridge, Massachusetts • South Omaha, Nebraska
South St. Joseph, Missouri • Kansas City, Kansas
Fort Worth, Texas • North Portland, Oregon

In Canada:
Swift Canadian Co., Limited, Toronto, Ontario



"That reminds me,
Swift makes *all kinds* of adhesives!"

And we want to remind *you* — if you have a high speed line and need really *fast* set, Swift's 258 High Speed Adhesive is the fastest setting dextrine base glue we know.

It is made from low viscosity raw materials. The film—as spread—contains relatively little moisture, and it sets right *now*. On average chip board, it will tear fibre in eight seconds under ideal conditions.

It's intended for the toughest jobs of manufacturing folding boxes, sealing tops and bottoms of cartons, tube winding and gluing practically any other kind of container. It's dark amber, fairly fluid, and can be easily and quickly diluted to perfect working consistency.

Send for a ten-gallon introductory can at the 50-gallon drum price of $7.30 per cwt., F. O. B. shipping point. (Slightly higher from Fort Worth, San Francisco, Portland or Toronto.)

Write us for recommendations for* ANY *sticking job

SWIFT MAKES ALL ADHESIVES

Dextrine Adhesives • Dry Animal Glue
Liquid Animal Glue • Flexible Animal Glue • Pastes
Rubber Emulsions • Synthetic Resin Emulsions

For all uses, including:

Carton sealing • Case sealing • Mountings • Set-up boxes
Folding boxes • Flexible coatings • Bottle labeling
Can labeling • Laminating • Leather goods
Loose-leaf binders • Magazine coverings • Padding
Paper sizings • Remoistening • Tube winding
Woodworking • Many others

Take these scales

into your packaging conference

When you sit down to discuss packaging, you'll have three factors to weigh . . . merchandising value . . . protection effectiveness . . . and cost.

At every stage of the discussion, you'll find Du Pont Cellophane measures up to today's packaging needs.

Its *transparency* makes your product its own best salesman, always on the job to turn a shopper's glance into an impulse sale.

The 56 types of Du Pont transparent films are chemically tailored to provide the sanitary, moistureproof *protection* that meets the requirements of a wide variety of products.

What's more, Du Pont Cellophane gives you this transparent protection at *lowest cost*. It provides a *balanced* package.

There's still not enough Du Pont Cellophane to satisfy everybody, but we hope the day will soon come when our converters and ourselves can again meet all needs.

E. I. du Pont de Nemours & Co. (Inc.), Cellophane Division, Wilmington 98, Delaware.

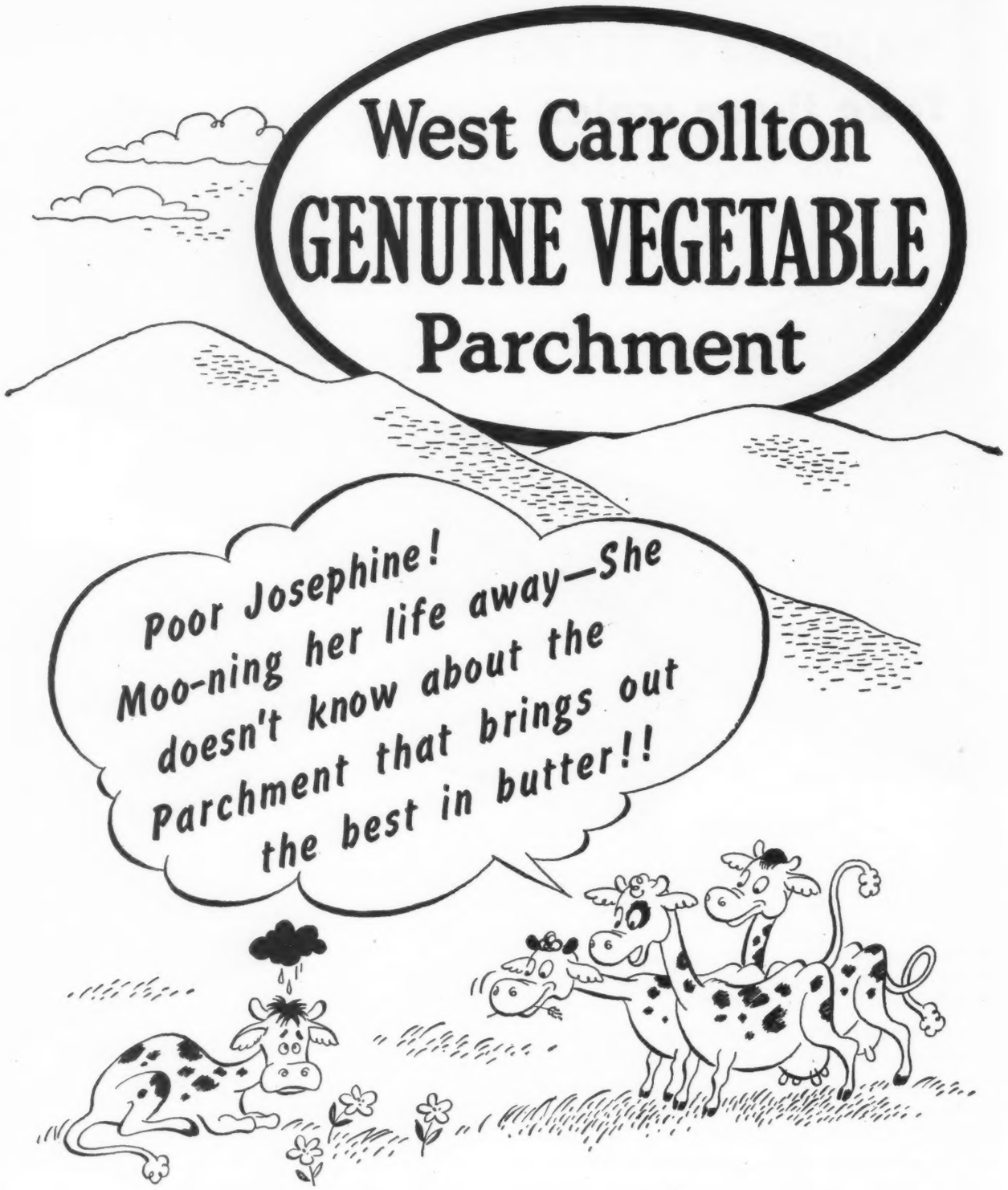
DU PONT
REG. U. S. PAT. OFF.

Cellophane

Shows what it Protects—at Low Cost

BETTER THINGS FOR BETTER LIVING
. . . *THROUGH CHEMISTRY*

West Carrollton GENUINE VEGETABLE Parchment



Practically all packers of moist foods—butter, shortening, meats, poultry, fish —know the parchment that keeps in *all the flavor*, that's odorless, insoluble and grease-resistant. Complete printing service in our own plant. Printed in one or more attractive colors, with inks specially made for food wrappers.

WEST CARROLLTON PARCHMENT CO.

WEST CARROLLTON, OHIO

Smart designs for selling

pack to attract in

Maryland Glass

Maryland Glass Corporation, Baltimore 30 . . . 270 Broadway, New York 7 . . . Berman Bros., Inc., 1501 S. Laflin St., Chicago 8 . . . J. E. McLaughlin, 401 Lock St., Cincinnati 2 . . . Aller Todd, 1224 Union Ave., Kansas City 7 . . . S. Walter Scott, 608 McCall Bldg., Memphis 3 . . . H. A. Baumstark, 4030 Chouteau Ave., St. Louis 10 . . . Owens-Illinois Glass Co., Pacific Coast Division, 135 Stockton St., San Francisco 19.

You get the services

WHEN YOU SPECIFY

FLEXIBLE PACKAGING

MEMBER FLEXIBLE · PACKAGING fpi INSTITUTE

Allied Paper Bag Corporation, Baltimore, Md.
American Bag & Paper Co., Philadelphia, Pa.
The American Paper Goods Company, Kensington, Conn. and Chicago, Ill.
Arkell & Smiths, New York, N. Y.
Arlette, Inc., Bloomfield, N. J.
Beier & Company, Chicago, Ill.
Bemis Bros. Bag Co., Indianapolis, Ind.
Benj. C. Betner Co., Devon, Pa.
Alfred Bleyer & Co., Brooklyn, N. Y.
Brown Paper Goods Co., Chicago, Ill.
Capital Envelope Co., Ltd., Los Angeles, Calif.
Central States Paper & Bag Co., St. Louis, Mo.
Central Waxed Paper Company, Chicago, Ill.
Cupples-Hesse Corporation, St. Louis, Missouri
Custom-Made Paper Bag Co., Long Island City, N.Y.
Diaphane Bag Corporation, Philadelphia, Pa.
Dixie Wax Paper Co., Memphis, Tenn. and Dallas, Texas
The Jaite Company, Jaite, Ohio
Kehr Paper Products Co., Philadelphia, Pa.
Kellogg Container Division, United States Envelope Co., Springfield, Mass.
Kennedy Car Liner and Bag Company, Inc., Shelbyville, Ind.
Marathon Corporation, Menasha, Wis.
Mehl Manufacturing Company, Cincinnati, Ohio
Monoca Bag & Mfg. Co., Inc., Toledo, Ohio
Moser Bag & Paper Company, Cleveland, Ohio
Oneida Paper Products, Inc., New York, N. Y.
Orchard Paper Company, St. Louis, Mo.
Paramount Paper Products Co., Inc., Philadelphia, Pa.
Pioneer Paper Bag Co., Los Angeles, Calif.
Thomas M. Royal & Co., Philadelphia, Pa.
Tension Envelope Corporation, Kansas City, Mo. and New York, N. Y.
C. E. Stevens Bros. Inc., Baltimore, Md.
Union Bag & Paper Corporation, New York, N. Y.
Western Paper Converting Co., Salem, Oregon

"IN ADDITION to greaseproofness, packaging for our line of products must have family resemblance—must identify the contents immediately."

"We feel that the package we're now using does a good protective job, but doesn't give sufficient play to our brand name. Please suggest a container that will make itself seen on super-market shelves."

"We're about to introduce a new insecticide which must be protected against moisture-vapor. The formula is completely new, so the package should be informative. It should also be forceful and attractive."

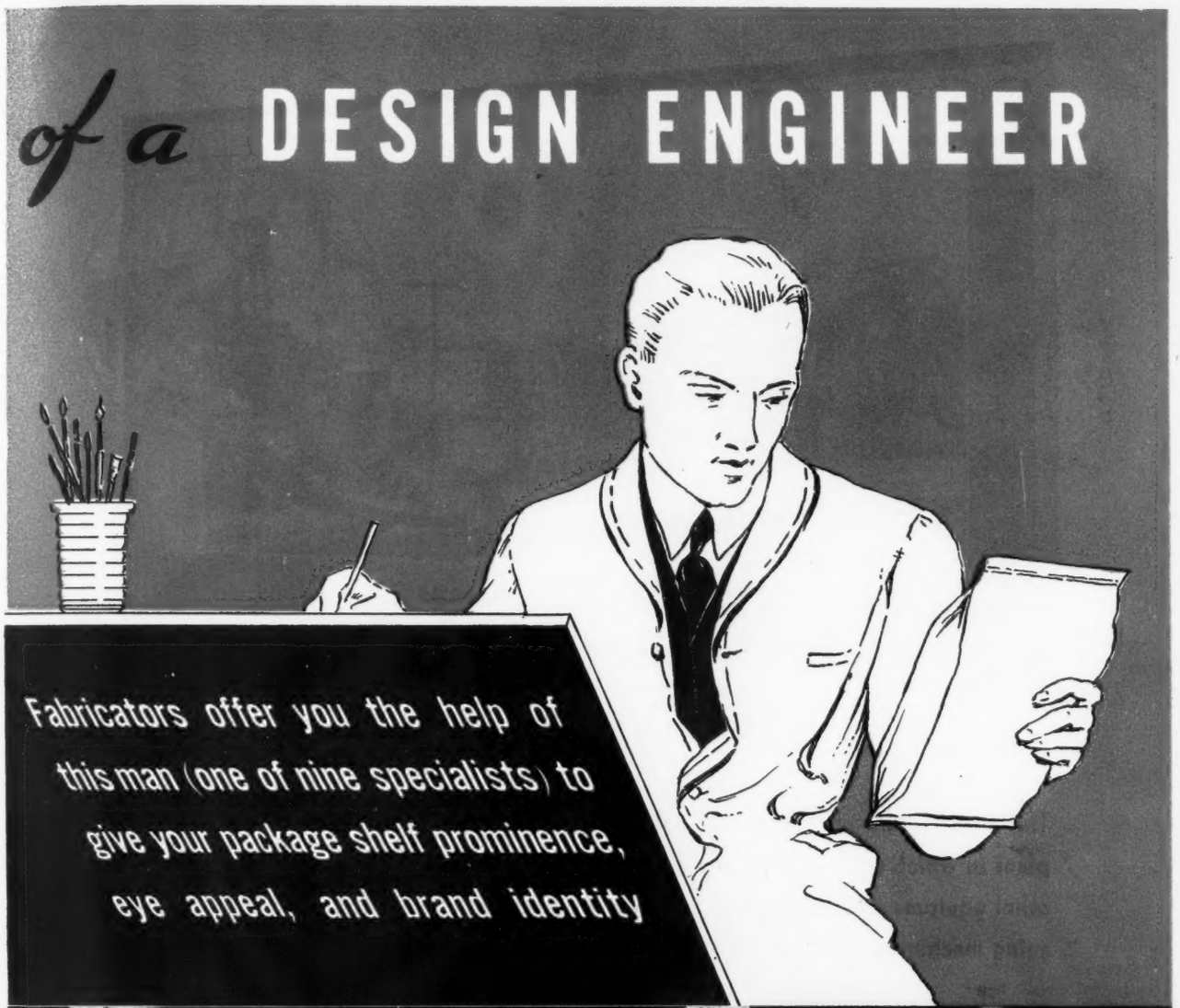
Problems such as these emphasize the need for packaging that combines good design with protection. And they emphasize the importance of the rôle *the design engineer* plays in the fabrication of a flexible container.

The design engineer achieves visual appeal, shelf prominence and brand identity through the application of illustration, color and type to the materials from which flexible packaging is fabricated. He works closely with eight other specialists to give you containers of the proper form and size with the desired protection.

If you need the custom-built qualities of flexible packaging and wish a new package designed, or a re-designing job done, investigate. Simply write to the address below.

FLEXIBLE PACKAGING INSTITUTE
369 Lexington Avenue • • • • New York 17, N. Y.

of a DESIGN ENGINEER



Fabricators offer you the help of this man (one of nine specialists) to give your package shelf prominence, eye appeal, and brand identity

This is the home of the famous Standard-Knapp packaging equipment. This is the plant in which some of America's finest case packers and case sealers, labelers and other equipment are manufactured. It is one of the finest and most up-to-date packaging machinery manufacturing plants in the country.

Standard-Knapp equipment is known for its unique engineering, its sound construction, its long life and low maintenance. Most Standard-Knapp equipment is especially designed and built to perform specific functions. Each industry has its own packaging problems and Standard-Knapp engineering and construction skill has the answer to most of them.

We will be glad to give you further details and information. We would enjoy having you visit our plant at any time.

STANDARD-KNAPP CORP.

MANUFACTURERS OF CASE SEALING, CASE PACKAGING AND CAN LABELING MACHINES
FACTORY and GENERAL OFFICES—PORTLAND, CONNECTICUT

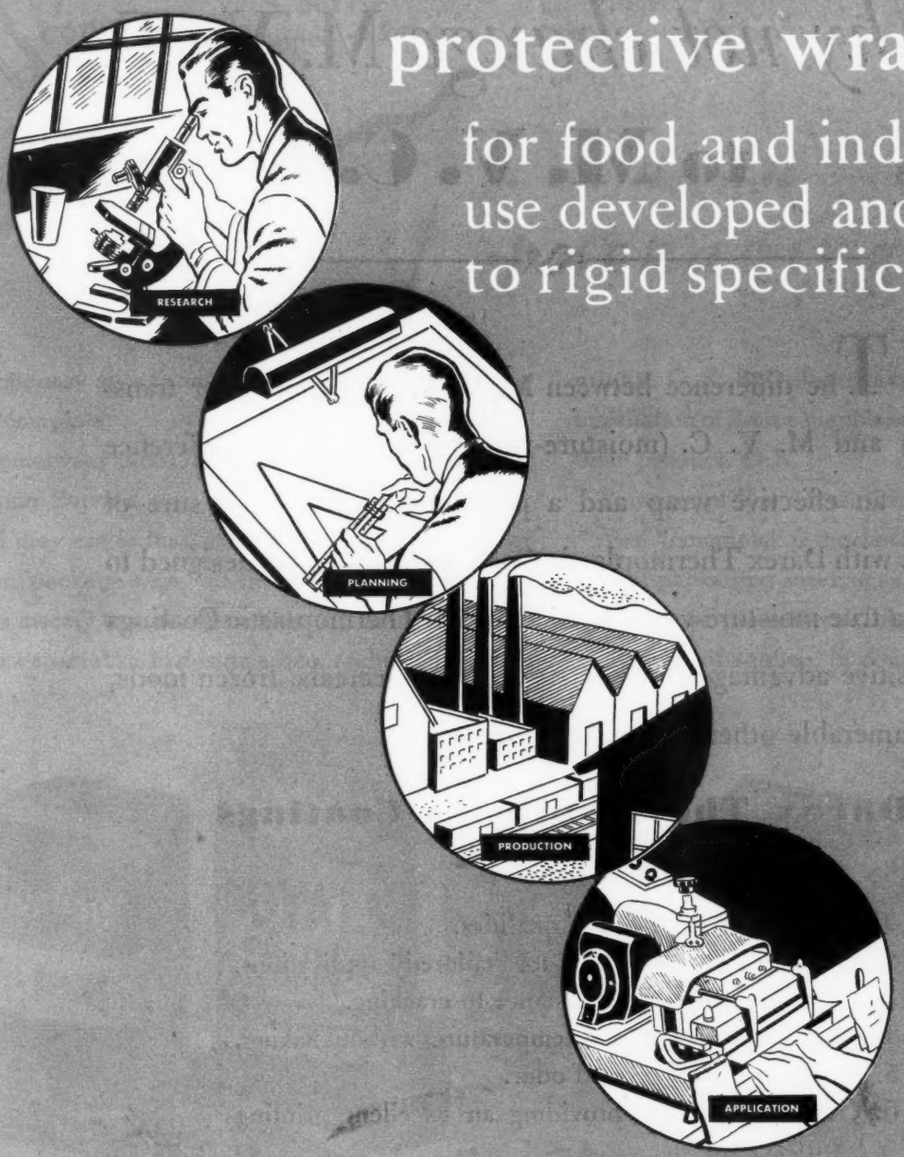
570 Lexington Avenue, NEW YORK 22, N. Y. | 221 North LaSalle St., CHICAGO 1, ILL. | 145 Public Square, CLEVELAND 14, OHIO | 300 Seventh Street, SAN FRANCISCO 3, CALIF.

420 S. San Pedro Street, LOS ANGELES 13, CALIF. | 3224 Western Avenue, SEATTLE 99, WASH. | 1208 S. W. Yamhill Street, PORTLAND 5, OREGON | Paul Brown Building, ST. LOUIS 1, MO.

Windsor House, Victoria Street, LONDON, ENGLAND

protective wrappings

for food and industrial use developed and made to rigid specifications



BULKLEY, DUNTON & CO.

295 MADISON AVENUE, NEW YORK 17, N.Y.

SPECIALISTS IN PROTECTIVE WRAPPINGS

Why not change M. V. T. to M. V. C.?

The difference between M. V. T. (moisture-vapor transmission) and M. V. C. (moisture-vapor control) is the difference between an effective wrap and a poor one. You can be sure of M. V. C. with Darex Thermoplastic Coatings, for they are designed to provide a true moisture-vapor barrier. Darex Thermoplastic Coatings offer positive advantages for wrapping cheese, cereals, frozen foods, and innumerable other hygroscopic products.

Darex Thermoplastic Coatings give you:

1. Remarkable heat-sealing qualities.
2. Controllable film weights for "tailored" applications.
3. Clean creasing, with resistance to cracking.
4. Ability to withstand low temperatures without flaking.
5. Freedom from taste and odor.
6. One-side coatings, providing an excellent printing surface.
7. Economical large-scale application.

. . . . . *plus* positive assurance against moisture-vapor transmission.

DAREX THERMOPLASTIC COATINGS

A product of DEWEY AND ALMY CHEMICAL COMPANY Cambridge 40, Massachusetts

complete, *adj.* 1. No part lacking. 2. Perfectly equipped.—*Syn.* Entire, total.

. . . as in Betner packaging service

The dictionary says those things, and more, about the word "complete."

Customers say those things, and more, about Betner Packaging Service.

Glad they are to find, at Packaging Hq., as much or as little, package-wise, as their set-up needs. Some want us merely to make their bags. O. K. Others enlist our artist-specialists to design a bag, and our presses to print it. O. K. Still others take our newest service, the installation of Benco machinery for loading and sealing their product. O.K.

Some want the works! Oh *Kay!*

Yes, "complete" is the word for what we have in the way of packaging service; as much or as little of what we have as pleases you. Ask for more "complete" details; no obligation, of course.

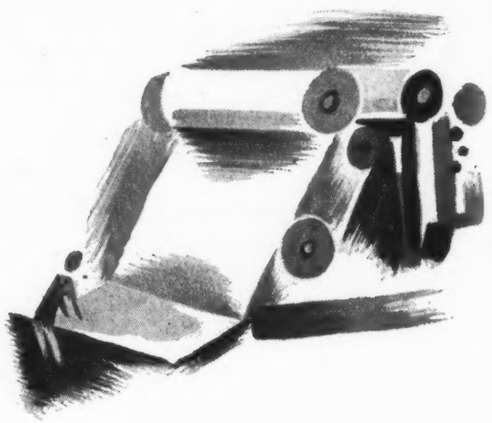
Benj C Betner Co DEVON, PA.

BENJ C BETNER CO OF CALIFORNIA, LOS ANGELES, CAL.

NOW READY—

Gift Wraps

by



DECOTONE PRODUCTS DIVISION

GIFT WRAPS ☛ ***for CONVERTERS***

6 distinctive new designs. We will supply Converters in sheets or in jumbo rolls for fold packaging, as desired.

GIFT WRAPS ☛ ***for JOBBERS***

Furnished in packaged reams for the Jobbing trade. Or our facilities permit us to put up in counter rolls, if desired.

GIFT WRAPS ☛ ***in 2 COLOR Open Designs***
in 3 COLOR Open Designs
in 2 COLOR Choke Designs
in 3 COLOR Choke Designs

Put up in COUNTER ROLLS, if desired

SPECIAL DESIGNS in Gift Wrappings will be developed by our Design Service to meet your requirements, if you wish. Let us work with you. Write today!

DECOTONE PRODUCTS
DIVISION
Fitchburg Paper Company

PACKAGING PAPERS *Converted Papers* SPECIALTY PAPERS

FITCHBURG, MASS.

New and wider uses for paper have been created by PAREZ resin 607, the synthetic paper resin that imparts superior wet and dry strength to all types of raw stock.

Soon, because of these unprecedented characteristics, wet strength paper may successfully replace cloth in the manufacture of bed sheets, pillow cases, towels, wash cloths, handkerchiefs, table cloths and napkins, and diaper backings.

The success of such new applications is assured by the remarkable performance of wet strength paper in wartime maps, toweling, food wrappers, containers, shipping tags, and field note books. Wet strength paper has also come into its own in the manufacture of absorbent papers, bag and sack papers, saturating papers, photographic papers, poster papers, twisting papers, and wrappings.

PAREZ 607 can be added directly to the fiber finish during paper manufacture. It serves to bind the fibers together with a bond that is insoluble in water and most other liquids. As the paper comes off the machine, tests reveal outstanding improvements in bursting and tensile strength, along with a pronounced increase in folding endurance. Furthermore, PAREZ bonding does not adversely affect such properties of paper as color, opacity, or surface characteristics.

For full details on the utilization of Cyanamid's melamine paper resin, PAREZ 607—which offers opportunity to endow your products with new sales features—see your Cyanamid representative or write to the nearest Cyanamid office.

American Cyanamid & Chemical Corporation

(A Unit of American Cyanamid Company)

30 ROCKEFELLER PLAZA • NEW YORK 20, N. Y.

DISTRICT OFFICES: Boston, Massachusetts; Philadelphia, Pennsylvania; Baltimore, Maryland; Charlotte, North Carolina; Cleveland, Ohio; Chicago, Illinois; Kalamazoo, Michigan; Detroit, Michigan; St. Louis, Missouri; Azusa, California; Seattle, Washington. In Canada: Dillons Chemical Company, Ltd., Montreal and Toronto.

**Trade-mark of American Cyanamid & Chemical Corporation covering its synthetic resins for use by the paper industry. The processes under which PAREZ is applied in the production of wet strength paper are covered by U. S. Patents Nos. 2,291,079, 2,291,080 and 2,345,543 and U. S. Patent Application Serial No. 453,032.

Waxes • Wax Sizes • Resin Size
PAREZ** Resins • Synthetic Resins
Casein • Alum • Sulphonated Oils
Fillers • Defoamers • Soda Ash
Caustic Soda • Salt Cake • Acids
Clays • Satin White • Aerosol* Wetting Agents • Calmicro (Calcium Carbonate) and other Paper Chemicals
*Reg. U. S. Pat. Off.

PREFERRED

Stencil Marked for Prompt Identification.

Illegible addressing causes delays and lost shipments.

Do your shipments receive preferred handling in transit to your customers? Stencil addressed shipments get preferred handling...

Stenciled Shipments Roll Faster!

Why? Common carriers recommend stencil addressing. Stencil addressed shipments are clear–easily read–permanently marked–and eliminate illegibility–labels coming off–speeds delivery–*due to prompt identification in transit.*

Stencil addressed shipments keep your packages out of the carriers' Lost Shipment Warehouse.

DIAGRAPH-BRADLEY

STENCIL MACHINE CORPORATION

ST. LOUIS 8, MISSOURI

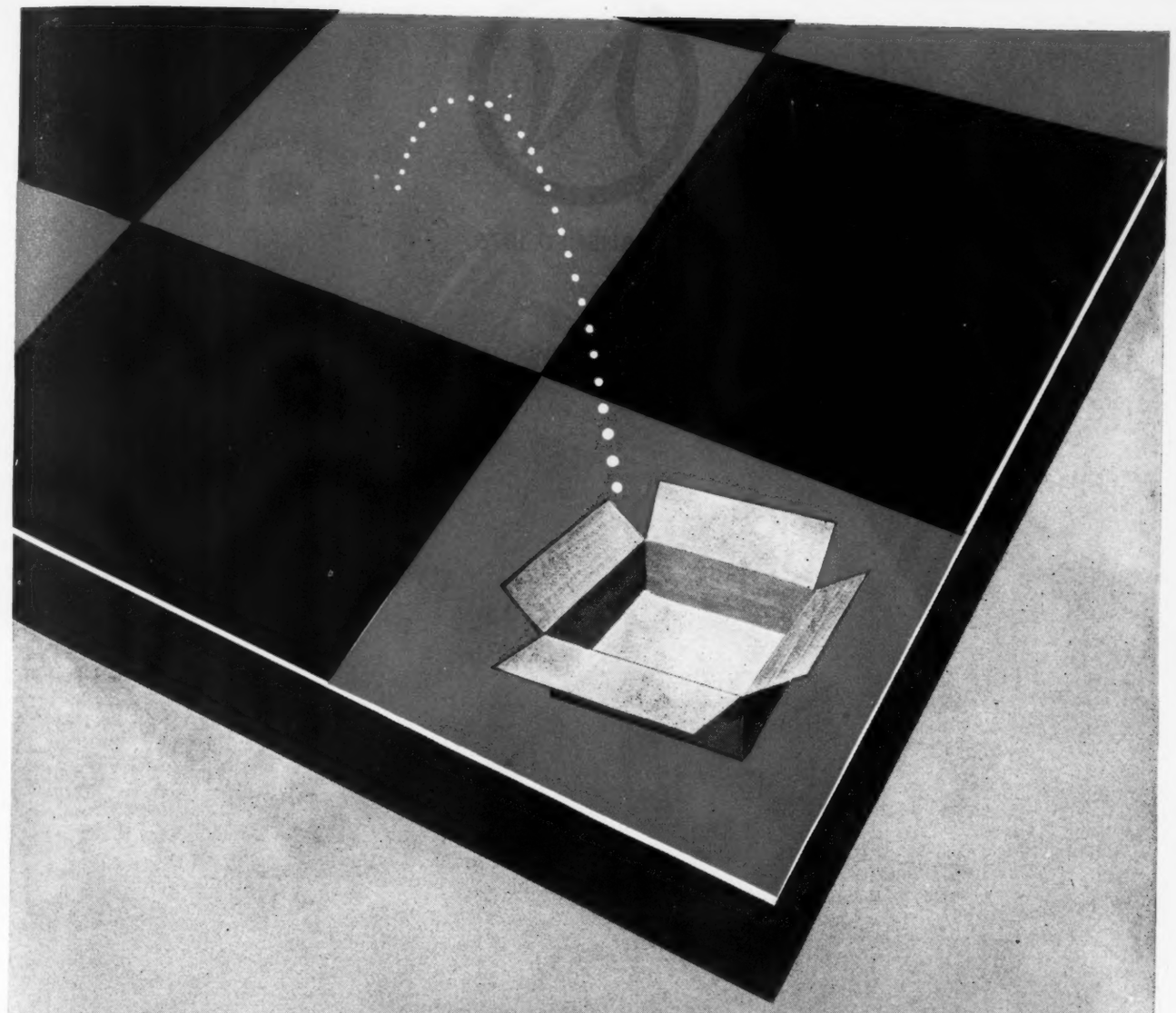
DISTRIBUTORS IN PRINCIPAL CITIES–SEE CLASSIFIED SECTION–TELEPHONE DIRECTORY–STENCIL CUTTING MACHINES

D.B.

REG U. S. PAT. OFF.

THE WORLD'S OLDEST AND LARGEST MANUFACTURER OF STENCIL CUTTING MACHINES

Complete Shipping Room Supplies

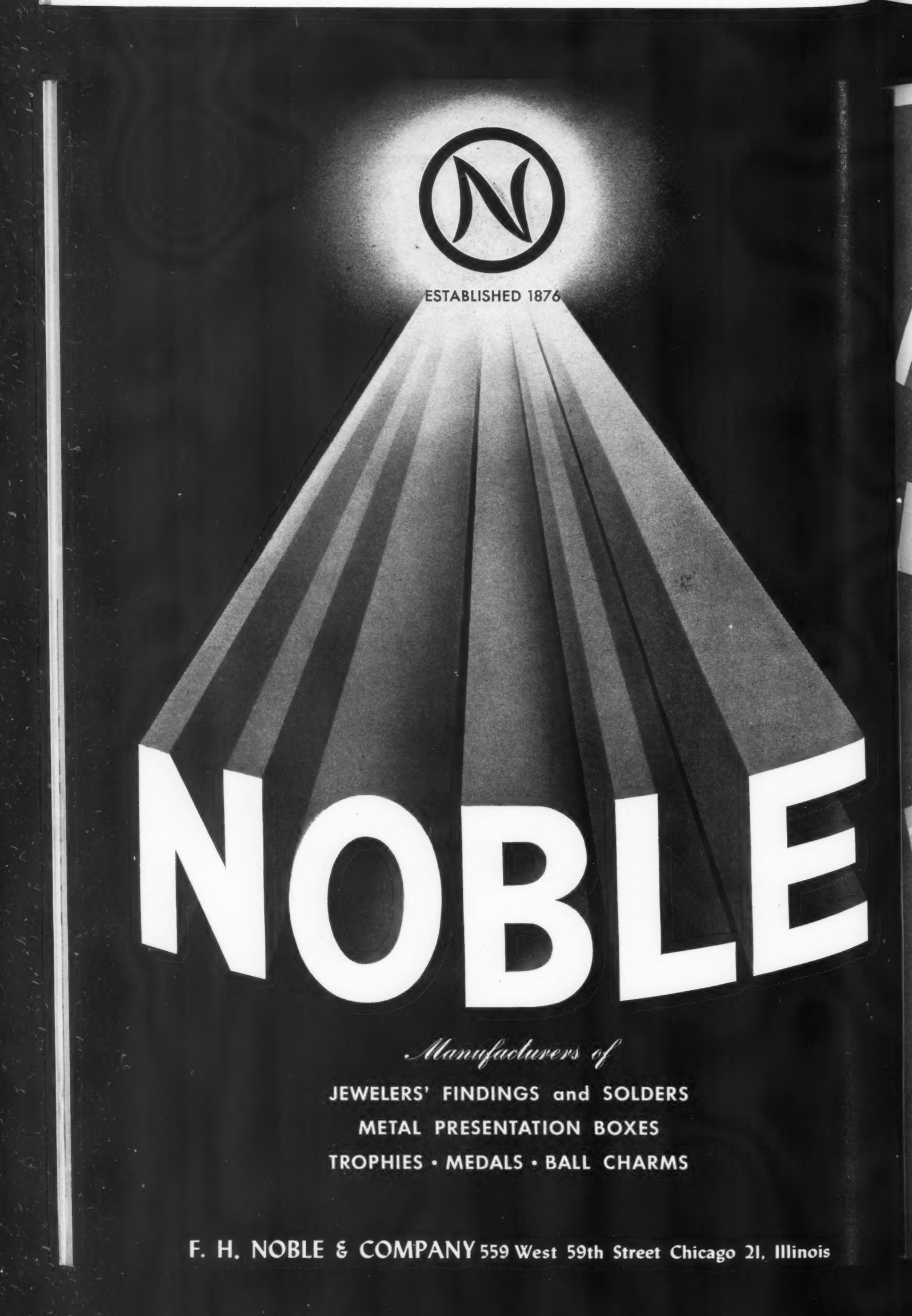


the products of leading industries

move on

ALVEY ST. LOUIS Conveyors

ALVEY CONVEYOR MANUFACTURING CO., 3201 SOUTH BROADWAY, ST. LOUIS 18, MO.


ESTABLISHED 1876
NOBLE
Manufacturers of
JEWELERS' FINDINGS and SOLDERS
METAL PRESENTATION BOXES
TROPHIES • MEDALS • BALL CHARMS
F. H. NOBLE & COMPANY 559 West 59th Street Chicago 21, Illinois

FOOD PRODUCT IDENTIFICATION

the Modern Way

This sheet is a sample of McLaurin-Jones'

HEAT SEAL FOOD LABEL

Specially developed for banding and labeling foods and other preparations in conformity with Pure Food Laws. In the manufacture of the paper itself, all government regulations have been adhered to.

Technical detail: Temperature for proper heat sealing depends upon length of time of contact with heating element and amount of pressure applied. 250°-350° F. is satisfactory on most equipment. Sticks to moisture-proof cellophane at 250°-350° F.

We will be glad to supply you with additional test sample sheets.

LACLEDE'S Finest
INGREDIENTS: Pork Livers, Pork Stomachs, Pork Lips, Pork Skins, Water, Onions, Salt and Spices.
LACLEDE PACKING CO. ST. LOUIS, MO.
U. S. INSPECTED AND PASSED BY DEPARTMENT OF AGRICULTURE Est. 16
INGREDIENTS: Pork, Beef, Veal, Salt, Spices and Flavorings.
EAST ST. LOUIS INSPECTED AND PASSED. EST. No. 1
MADE BY CIRCLE PACKING CORP.
Log Cabin BRAND
LINK SAUSAGE H. C.
TYPE 2
CEREAL ADDED
EAST ST. LOUIS, ILL.
INGREDIENTS: Pork, Beef, Veal, Pork Cheeks, Water, Salt, Sugar, Spices, Sodium Nitrate and Sodium Nitrite.
EAST ST. LOUIS INSPECTED AND PASSED. EST. No. 1
MADE BY CIRCLE PACKING CORP.
CHAMPION BRAND
FRANKFURTER H. C.
TYPE 2
CEREAL ADDED
EAST ST. LOUIS, ILL.
HEAT SEAL FOOD LABEL
GARFIELD BRAND
FRANKFURTER
Cereal Added
Artificially Colored
INGREDIENTS
Hog Stomachs, Beef Shanks, Beef Tongue Trimmings, Beef, Water, Beef Gullet Meat, Salt, Spices, Wheat Flour, Sodium Nitrate, Sodium Nitrite
H. C.
AMERICAN PACKING COMPANY
ST. LOUIS, MO.
U. S. INSPECTED AND PASSED BY DEPARTMENT OF AGRICULTURE EST. 28
MELROSE Trade Mark
SMOKED SAUSAGE
H. C.
Packed by ARMOUR AND COMPANY Union Stock Yards Chicago, Ill.
U. S. INSPECTED AND PASSED BY DEPARTMENT OF AGRICULTURE EST. 20
FRANKFURTERS H. C.
Dried Skim Milk Added—Artificially Colored
Ingredients: Beef, Pork, Water, Salt, Dried Skim Milk, Flavorings, Dextrose, Spices, Sodium Nitrite.
LACLEDE PACKING CO. ST. LOUIS, MO.
LACLEDE BRAND
U.S. INSPECTED AND PASSED BY DEPARTMENT OF AGRICULTURE EST. 16
FORMULA
2 grs. pepsin
2 grs. magnesium trisilicate
1/4 gr. dicotate of mob
1/2 gr. diastric malt
1/2 gr. malted milk
1/16 gr. extract licorice
1/20 gr. saccharin
1/30 gr. oil of anise
filler (mart)
Contents 4 tablets
Directions for Taking:
1 to 4 daily as required
Pap-aids 10¢
A DIGESTIVE AID AFTER MEALS and "THE MORNING AFTER"
DISTRIBUTED BY VITAL PRODUCTS CO., EVANSTON, ILL.

The label samples shown here were originally produced on HEAT SEAL FOOD LABEL. They are reproduced by courtesy of St. Louis Sticker Co., St. Louis, Mo., and A. M. Steigerwald Co., Chicago.

McLAURIN-JONES COMPANY
440 MacLaurin St.
BROOKFIELD, MASSACHUSETTS
Offices: New York - Chicago - Los Angeles

As your Modern Packaging "Goes Volume"

—employ *Industrial* LOGISTICS* in developing new ways to transport Boxes, Barrels, Bags, Bales faster, more safely, more economically. Get 5 free Bulletins showing how.

VOLUME no end! Materials in Unit Containers by the thousands or millions coming in, passing through, and leaving your plant every year, challenge you to apply Industrial Logistics to reduce Distribution Costs—to market more merchandise.

You *need* Industrial Logistics—*and* high-quality, long-lasting Elwell-Parker Electric Trucks to make your load-transportation economies *come real.* These 5 illustrated Bulletins contain vital facts—for you and for your Procurement, Production and Sales Executives. The E-P Man will bring them when he calls to plan your Load-Transportation Survey.

Please use the coupon, or write The Elwell-Parker Electric Co., 4525 St. Clair Avenue, Cleveland 14, Ohio.

* The science of assembling and handling materials to insure maximum economies at every stage of (a) Procurement, (b) Production and (c) Distribution, using Elwell-Parker Electric Trucks, Tractors and Cranes;
Employing the correct containers (Boxes, Barrels, Bags or Bales) in Master Unit Loads, on Pallets or Skids;
To insure Greater Speed—Faster Production—Greater Turnover—Increased Safety—New Profits.

ELWELL-PARKER
POWER INDUSTRIAL TRUCKS
Established 1893

Clip, attach to your letterhead, and mail to Elwell-Parker, Cleveland:—

Send your 5 Industrial Logistics Bulletins to

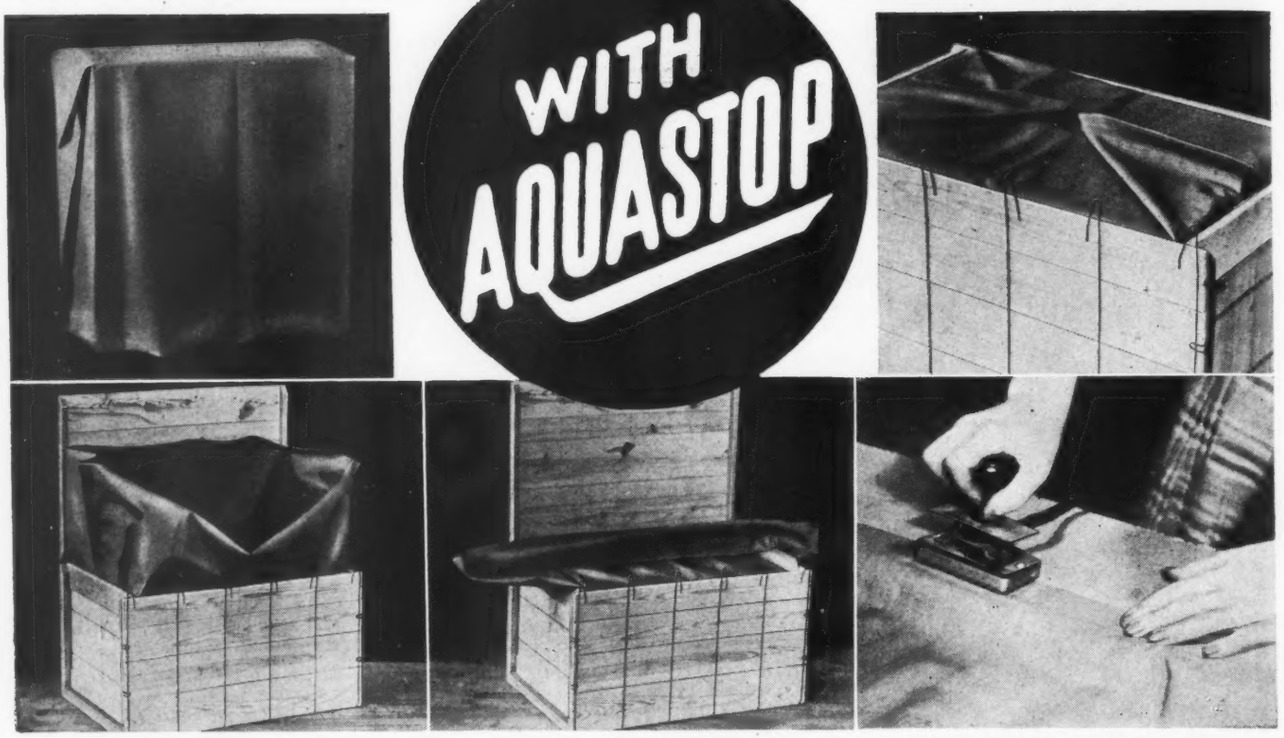
Name _____

Title _____

Firm _____

City _____ State _____ MP

5 WAYS WITH AQUASTOP TO PROFIT



Upper left: AQUASTOP liner ready to use
Lower left: Liner inserted in packing case

Center: Liner ready for heat sealing

Upper right: Case ready for cover
Lower right: Heat sealing liner

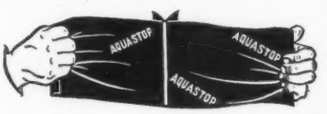
One of the unique advantages of Aquastop is its versatility. And this, in addition to its many other qualities, marks Aquastop as an exceptional material for packing case liners. For, besides being easy to use as shown above, other characteristics are:

Easy to heat-seal or chemically seal. Aquastop Cement, furnished by us, makes a chemical "weld" at seams and closure, strong as the material itself, or heat sealing by commercial methods is easily accomplished.

Easy to re-use. Aquastop is such a durable material that your customers can return liners for re-use on similar shipments, thus reducing liner costs on each shipment.

Moisture vapor transmission rate is high; the MINIMUM rate is 5 grams per 100 sq. in. per 24 hours, thus preventing ruinous corrosion from damaging finished products in transit. Moisture-laden air trapped in the case when packed or subsequently introduced escapes through this "breathing" liner before condensation takes place. Toxic compounds in the material prevent mold and fungus damage.

Aquastop may be used in the form of a shroud or "floating bag" which your customer can subsequently use as a waterproof and dustproof cover for the equipment.



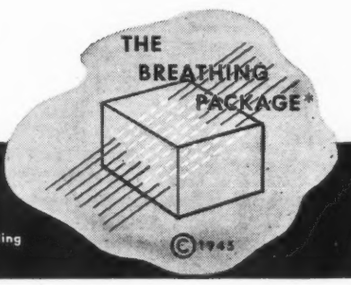
The seam or closure is as strong as the material itself.

Send for new illustrated Aquastop brochure showing how Aquastop can be applied to your shipping problems.

PROTECTIVE COATINGS CORPORATION

Manufacturers and Consultants

681 Main Street • Belleville 9, N. J.

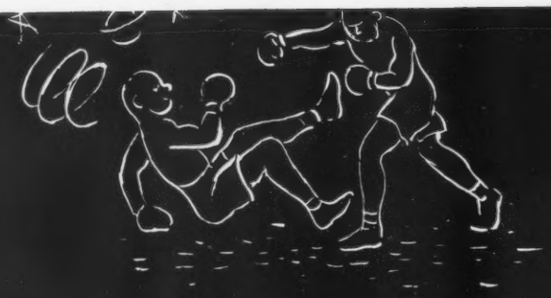


AQUASTOP *Pat. Pending

GAYLORD CONTAINER CORPORATION, General Offices: SAINT LOUIS

New York • Chicago • San Francisco • Atlanta • New Orleans • Jersey City • Seattle • Indianapolis
Houston • Los Angeles • Oakland • Minneapolis • Dallas • Jacksonville • Columbus • Tampa • Fort
Worth • Detroit • Cincinnati • Des Moines • Oklahoma City • Greenville • Portland • St. Louis
San Antonio • Memphis • Kansas City • Bogalusa • Milwaukee • Chattanooga • Weslaco • New Haven
Appleton • Hickory • Greensboro

HIT PEACE TIME COMPETITION WITH



HEEKIN CANS

ANY SHAPE · ANY SIZE · ANY COLOR · ANY QUANTITY

THE HEEKIN CAN CO., CINCINNATI 2, OHIO

PAX TAPE QUALITY IS BETTER FOR BETTER PACKAGING

Packaging designers are partial to PAX TAPE because of its uniform dependability in the solution of many modern packaging problems.

PAX TAPE seals instantly without moistening. It sticks stronger, lasts longer.

Use PAX TAPE for permanent anchorage on "hard-to-seal" packages and containers; and for many types of protective wrapping. PAX TAPE smartens up the package while doing an effective utility job.

TRY PAX TAPE

The BETTER Tape

Transparent and in Colors

THE COFAX CORPORATION • Lynbrook, N. Y.

What you don't know *can* hurt you!

If you've never tried
American Anode latices and mixes
for coating and impregnating paper...
You may not know what you've missed

There has been so much recent progress in the field of coating and impregnating paper with latices and mixes, it's doubtful if, in these busy days, paper chemists and engineers have been able to keep up with it.

That's why we invite you, now, to tell us what you are doing and how you are doing it. There's a good chance that we may be able to help you make a decidedly better product at a lower cost.

You'll like the inherent safety features of water systems, too; no dangerous, explosive solvents; no cumbersome and expensive recovery systems.

Latices and mixes of natural and synthetic rubbers, GEON, HYCAR, neoprene, and Saran are available from our bulk storage. For more information about the *modern* way to coat and impregnate paper, please write Department AC-4, American Anode, Inc., 60 Cherry Street, Akron, Ohio.

The American Anode laboratory in Akron is equipped with the latest and most modern paper testing equipment, and is staffed with people who know how to use it.

AMERICAN ANODE
INCORPORATED

NATURAL AND SYNTHETIC RUBBER LATICES, WATER CEMENTS AND SUSPENSIONS

Avoid These Hazards to Your Shipments

middle too dry!

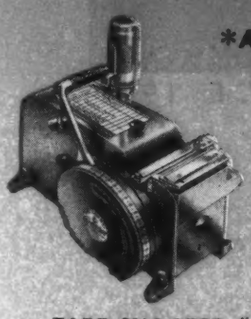
ends too dry!

spotty moistening!

too much water!

with Automatic-Moistening-Control*

correct moistening!



*Automatic-Moistening-Control, patented feature of Counterboy tape machines, assures correct moistening—safe, fast sealing with a minimum of trouble!

Better Packages, INC.
SHELTON, CONN.

TAPE-SHOOTER #120
ONE OF 52 MODELS— Counterboy TAPE MACHINES FOR EVERY SEALING PURPOSE

Creative designing and restyling
Exclusively handmade boxes

by

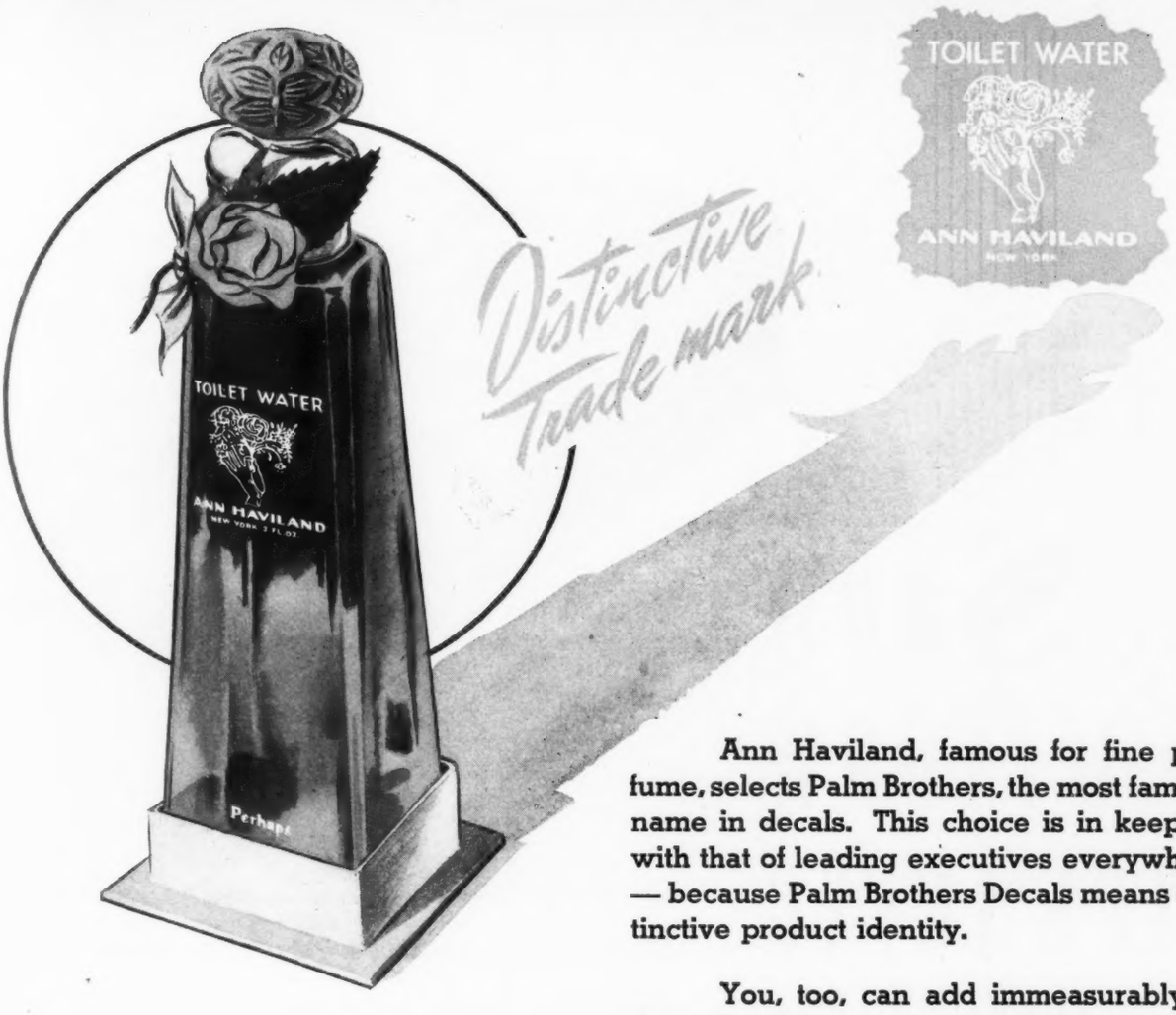
MAKDON

in New York City

306 WEST 37th STREET • SINCE 1940

in Paris, France

STE ANONYME JACQUES MAKOWSKY
ATELIERS D'IMPRESSION ET DE CARTONNAGE D'ART
34 RUE DES PEUPLIERS • SINCE 1920



Ann Haviland, famous for fine perfume, selects Palm Brothers, the most famous name in decals. This choice is in keeping with that of leading executives everywhere — because Palm Brothers Decals means distinctive product identity.

You, too, can add immeasurably to the irresistible eye appeal and the certainty of your package recognition with Palm Brothers Decals. You'll like their ease of application, their permanency and economy.

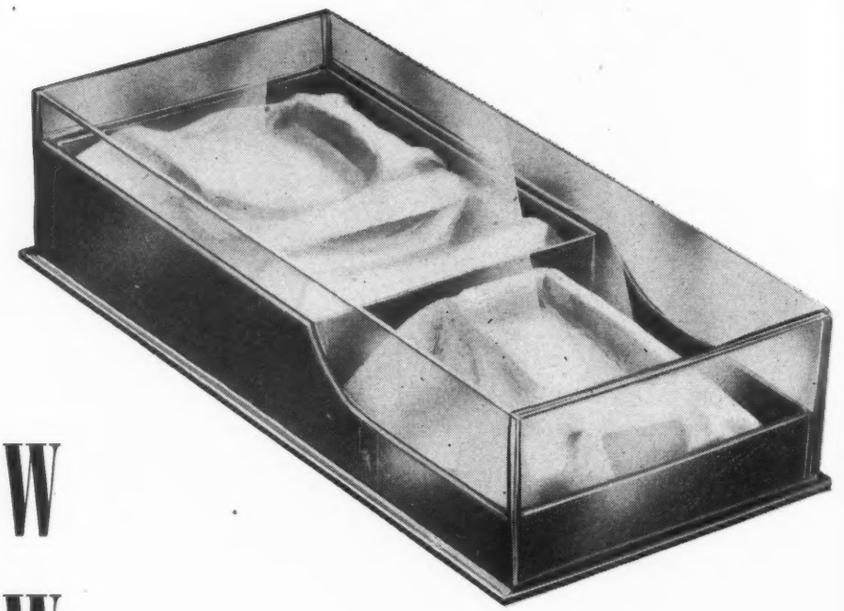
There's a Palm Brothers Decal for almost every commercial surface, with proved properties to give you the utmost in satisfactory performance.

See for yourself! Drop us a note and we'll be pleased to prepare individually designed sketches, quote prices, and furnish complete information.

THE PALM BROTHERS Decalcomania Co.

CINCINNATI..12...OHIO..U.S.A.

SHOW WINDOW PACKAGING



Transparent covers combined with fine set-up board and paper platforms display your products to best advantage.

Better packaging will insure maximum sales. Outstanding products deserve eye-catching display. Try our boxes.

•

FERDINAND BUEDINGEN COMPANY

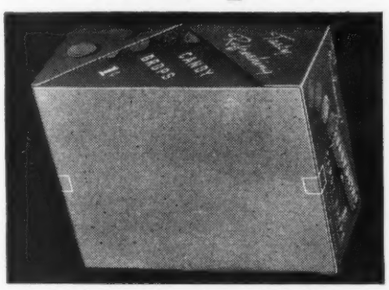
INCORPORATED

P. O. BOX 723 ROCHESTER 3, N. Y.

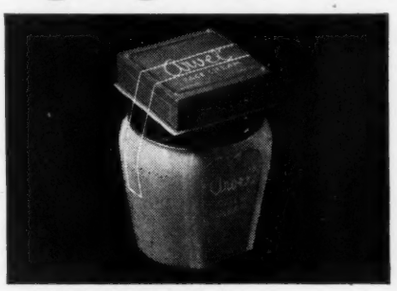
Come and GET IT!

LARGE ROLLS—
ALL YOU WANT—
FOR IMMEDIATE DELIVERY

Do Every Packaging Job Faster — Better.★

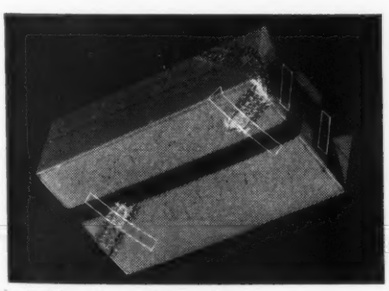


★ **Seal telescope-type boxes in a flash**
Two tabs of "Scotch" Tape hold covers tight.



★ **Hold combination deals**
"Scotch" Tape is transparent — doesn't spoil packages or hide printing.

★ **Seal metal or cardboard containers**
Use Transparent "Scotch" Tape for invisible seal or one of 12 colors to indicate style, color or date of manufacture of contents.



★ **Hold package decorations**
Keep ribbons or bows in place or use colored "Scotch" Tape as decoration.

★ **Seal paper bands or labels**
Holds label firm — repairs torn wrappers to keep out dust and dirt.

★ **Seal and label cellophane bags**
One strip of "Scotch" Tape seals the bag and fastens the label firmly.

Order your supply of large 2592 inch rolls today. Use with the time-and-tape-saving Heavy Duty Dispenser.

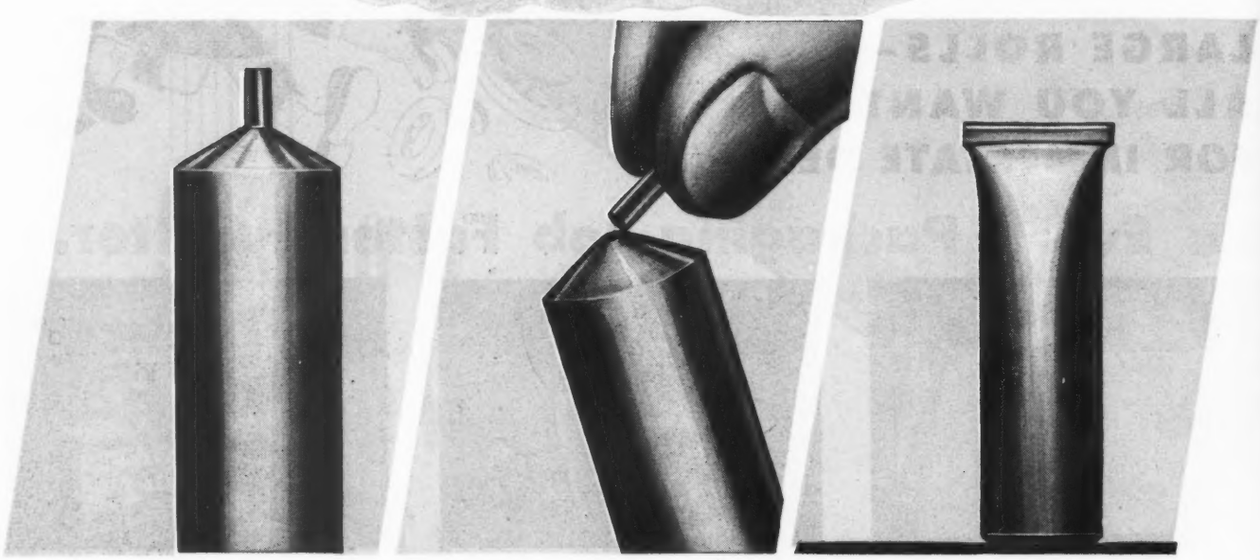
Reg. U. S. Pat. Off.

SCOTCH *Cellulose* TAPE
BRAND

"SCOTCH" is the registered trade-mark for the adhesive tapes
made in U. S. A. by MINNESOTA MINING & MFG. CO., Saint Paul 6, Minn.
THE 3M COMPANY

WIRZ *Mono-Pak*

SINGLE-USE TUBE — IDEAL SAMPLING AND DISPENSING UNIT FOR YOUR PEACE-TIME PRODUCTS



Easy to open — easy to use — safeguards flavor, consistency — assures exact dosage

Individual portions of coffee, dehydrated soups, juices, pastes, hydroscopic powders and granular products, ointments, and toilet preparations will be more acceptable to your Peace-time markets in sanitary, convenient WIRZ Mono-Pak single-use collapsible metal tubes. Hermetically sealed, non-refillable, economical, WIRZ Mono-Pak Tube preserves your product's original freshness, purity, consistency, flavor, or scent. Prevents substitution, dispenses exact quantity. Product reaches your customer in perfect condition. Easy to open, easy to use, WIRZ Mono-Pak Tube can be attractively decorated. Requires no labeling or capping. This unusual merchandising tube for liquids, pastes and powders should be in your Peace-time packaging and sampling plans. WIRZ Tubes are practical in different sizes for a variety of products . . . with suitable linings to combat corrosion and seepage. Count on WIRZ Tubes to protect your product, your brand name and your markets.

A. H. WIRZ, INC.

Fourth & Cole Sts.
CHESTER, PA.

Established 1836

COLLAPSIBLE METAL TUBES • LACQUER LININGS • WAX LININGS • WESTITE CLOSURES
HOUSEHOLD CAN SPOUTS • COMPRESSION MOLDING

New York 17, N.Y. 50 E. 42nd St. — Chicago 4, Ill. 80 E. Jackson Blvd. — Memphis 2, Tenn. Wurzburg Bros. — Havana, Cuba Roberto Ortiz Planos

A. G. Spilker { Los Angeles 14, Calif., 1709 W. 8th St. (Exposition 0178)—Also Danville, Calif.

Seeing it in Glass Containers *is Believing*

THE "show me" spirit of modern housewives helps them to be thrifty shoppers and gracious homemakers. They like to see what they're buying and they like containers that tell them at a glance when the supply is running low. That's why they prefer to have their foods packed in Anchorglass Containers.

The Anchorglass Container displays your product with all its colorful eye and appetite appeal and, since it imparts no foreign tastes or flavors, it delivers your choice foods to the consumer without losing any of the original goodness packaged at your plant.

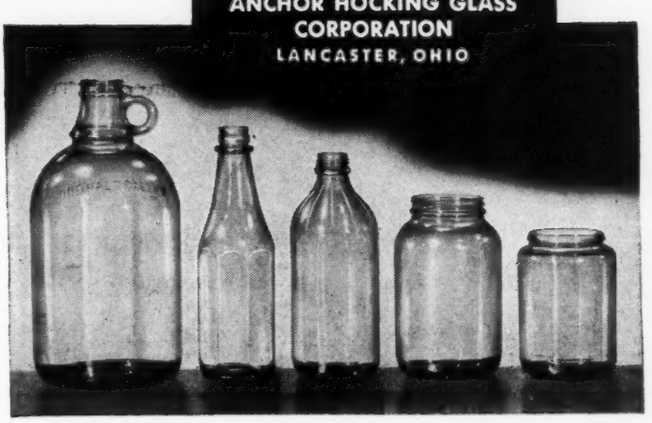
The Anchorglass Container is easy and safe to open and can be tightly resealed to protect unused portions of food. It's a convenient, sanitary, attractive package that honestly reveals the nature and quantity of its contents.

Investigate the Anchorglass Container. The housewife prefers it and it offers you the solution to many of your packaging and merchandising problems.

Hear the ANCHOR HOCKING'S HOBBY LOBBY CBS NETWORK . . . THURS. EVE.

Anchor CONTAINERS and CAPS

PRODUCTS OF
ANCHOR HOCKING GLASS CORPORATION
LANCASTER, OHIO



Prelude to Praise—

It's quite obvious, this hostess knows her way around. She's making sure the evening will be a social success for herself as well as an occasion to be remembered by her guests. Tasty cocktail sandwiches and appetizers, like these made with Wolff's Pimiento Olive Butter, can be counted on to tempt even jaded appetites. ◆ This popular pimiento and olive butter is packed by M. Wolff & Sons of Chicago, Illinois. Crown Screw Caps are used to seal in all the tangy flavor and goodness. Only Crown Screw Caps have the patented Deep Hook Thread which effects more sealing pressure with the same amount of application force. Crown Cork & Seal Company, Baltimore 3, Md. *World's Largest Makers of Metal Closures.*

CROWN CLOSURES

BETTER PREPARE TODAY . . . . than regret tomorrow

This manufacturer plans to give his products a sales advantage through proper package design. That's why he's interested in the booklet, "Pack To Attract." This booklet might well mean a sales rebirth for your products, too. For your copy, write The Hinde & Dauch Paper Company, Executive Offices, 4608 Decatur St., Sandusky, Ohio.

TWENTY-THREE IDEAS FOR ONE LETTER

Perhaps you have thought: "How can I increase my sales through better packaging?" You will find the answer in "Pack To Attract," a booklet containing 23 packaging ideas that lead to more profitable packaging procedure. It shows how corrugated board, in the hands of H & D Package Engineers, is transformed into sales packages that protect in transit and attract at point-of-sale. It shows how modern packaging has become an outstanding sales influence. Get your packaging ready now—send for your copy of "Pack To Attract." The Hinde & Dauch Paper Company, Executive Offices, 4608 Decatur Street, Sandusky, Ohio.

REG. U. S. PAT. OFF.

H&D HINDE & DAUCH

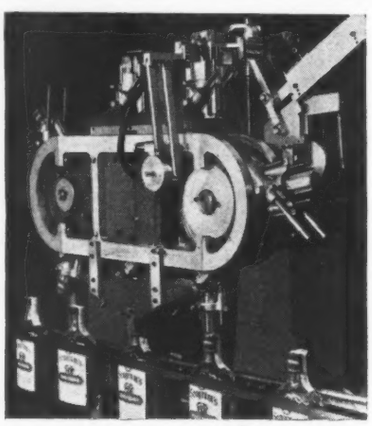
PACE-SETTER OF THE PACKAGING INDUSTRY

FACTORIES IN: Baltimore • Boston • Buffalo • Chicago • Cleveland • Detroit • Gloucester, N. J. Hoboken • Kansas City • Lenoir, N. C. • Montreal • Richmond • St. Louis • Sandusky, Ohio • Toronto

JUST OUT! 3 NEW WRIGHT MACHINES

- Wright's Automatic introduced three new, non-related automatic machines at the Annual Packaging Exposition in Atlantic City this month.
- Preliminary tests indicate that each machine probably can be adapted for use by other than the specific industry for which it was designed.
- Inquiries are invited, therefore, both from companies which obviously can use the machines and from all others for whom the machines might be adapted.

CELLULOSE BANDING

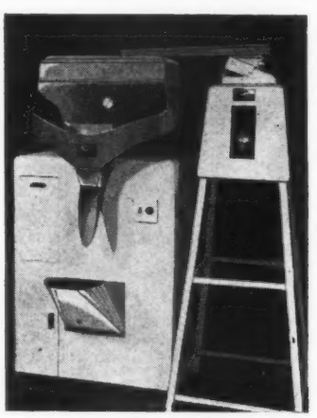


Close-up view of cellulose banding machine, minus guards, applying contractible cellulose bands to neck of liquor bottles over revenue strip stamp.

Hy-Tra-Lec Weigher

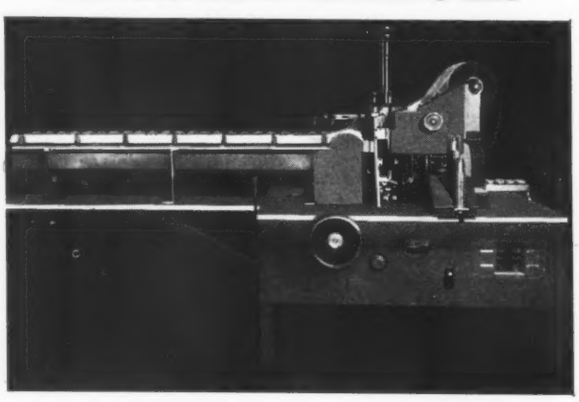
•

Weighs and discharges free flowing and non-free flowing materials at pre-determined net weights. Provides a degree of accuracy at high speeds previously unattainable. Machine pictured was designed for potato chip industry.



Hy-Tra-Lec employs a new principle of weighing which promises to have wide utility wherever accuracy and speed are essential.

MAY-PLEX WRAPPER



1. Wraps standard 5c packs of cracker type sandwiches in cellophane without use of cardboard support. 2. Heat seals the wrap. 3. Applies and seals labels to one or both ends.

Look to

WRIGHT'S *Automatic Machinery Company*

Durham, North Carolina
Established 1893

FOR NEW ADVANCES IN AUTOMATIC MACHINERY

CHEERFUL FLOWERY PATTERNS ADD CHARM
AND SALES APPEAL TO ANY PRODUCT.

WE HAVE MANY WARM AND PLEASING DESIGNS
TO CHOOSE FROM—WRITE US FOR SAMPLES FOR

BOX COVERINGS

DISPLAY PAPERS

GIFT WRAPPING PAPERS

This sample Pattern 680-B
Base stock Champion Kromekote, White.
Also made in other color combinations.

ROYAL PAPER CORPORATION

Manufacturers of Decorative Papers

210-216 ELEVENTH AVENUE, NEW YORK 1, N. Y.

Printed wraps...

What does it look like? Is it in good condition? How about quality? Lumarith transparent plain and printed wraps answer the shopper's questions about a product. Unlike regenerated cellulose, Lumarith film is a true plastic. It won't dry out or become brittle. It is dimensionally stable and won't soften even when used to package wet-washed greens, meats or fowl. It won't affect taste of wrapped foods or tarnish metal. Lumarith film has an ideal printing surface. Its crystal clarity permits printing on inside of wrap.

COMBINATION WRAPS . . . LAMINATIONS

Lumarith film laminated to cardboard, metal foil, kraft paper, vinyl films or cellophane will answer a wide variety of packaging specifications. The ultimate in product protection or package beauty can be obtained by the laminating method. Lumarith in combination will provide wraps that are impervious to water, moisture, fumes, gases and all types of infestation. Lumarith-backed pressure-sensitive tapes are dimensionally stable, have excellent printing surface, and do not dry out.

Send for LUMARITH PLASTICS PACKAGING BOOKLET. It is a practical idea book for converters and product manufacturers. Celanese Plastics Corporation, a division of Celanese Corporation of America, 180 Madison Avenue, New York 16, N. Y.

Reg. U.S. Pat. Off.

How Patapar HELPS SELL FOODS

Keeps them fresh

Patapar* Vegetable Parchment has qualities to keep foods fresh – appealing. It has high wet-strength. It resists penetration of fats, grease, oils. It is odorless. Tasteless.

Looks smart Patapar has a rich, translucent texture. It is smart looking – distinctive. When a shopper sees a Patapar-wrapped product, right away she thinks of quality. This helps make sales.

Beautiful printing Patapar can be beautifully printed with bright colors and designs. We do the printing in our own plants which are completely equipped for printing Patapar by letterpress or offset lithography.

If you want your Patapar printed, just call on us. We'll make sketches for you – do the art work – engravings – everything.

Keymark Many users of Patapar include this nationally advertised keymark on their printed wrappers. It's a way to tell customers that the product inside is well protected. *Reg. U. S. Pat. Off.

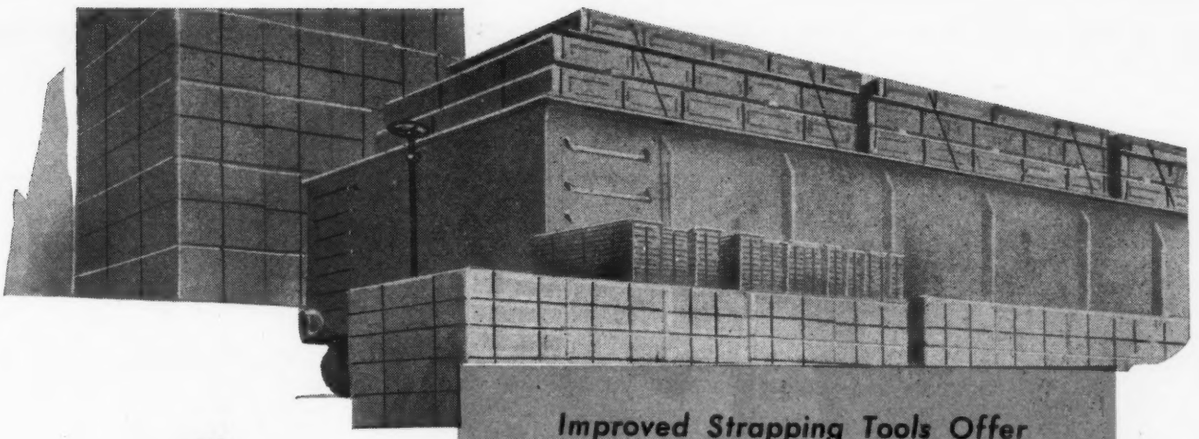
A FEW OF PATAPAR'S USES

Wrappers for butter, meats, fish, cheese, poultry, shortening, ice cream, vegetables. Carton and box liners. Bulk packaging units. Milk can gaskets. Milk bottle hoods. Can liners.

Paterson Parchment Paper Company • Bristol, Pennsylvania

Headquarters for Vegetable Parchment Since 1885

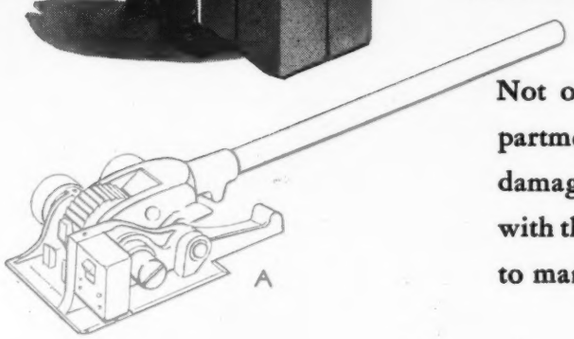
WEST COAST PLANT: 340 BRYANT STREET, SAN FRANCISCO 7, CALIFORNIA
BRANCH OFFICES: 120 BROADWAY, NEW YORK 5, N. Y. • 111 WEST WASHINGTON ST., CHICAGO 2, ILL.



Improved Strapping Tools Offer

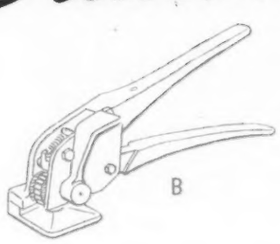
NEW EFFICIENCY—
NEW SHIPPING SATISFACTION
to Regular Users of

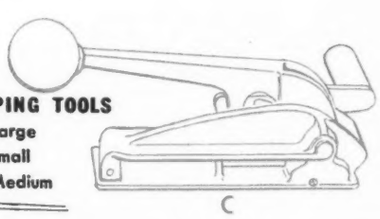
STEEL STRAPPING



Not only speed and economy in the shipping department but savings in transportation cost and in damage claims result from use of the right strapping with the best tools. These advantages will be afforded to many manufacturers by

Steelband Shipping Service





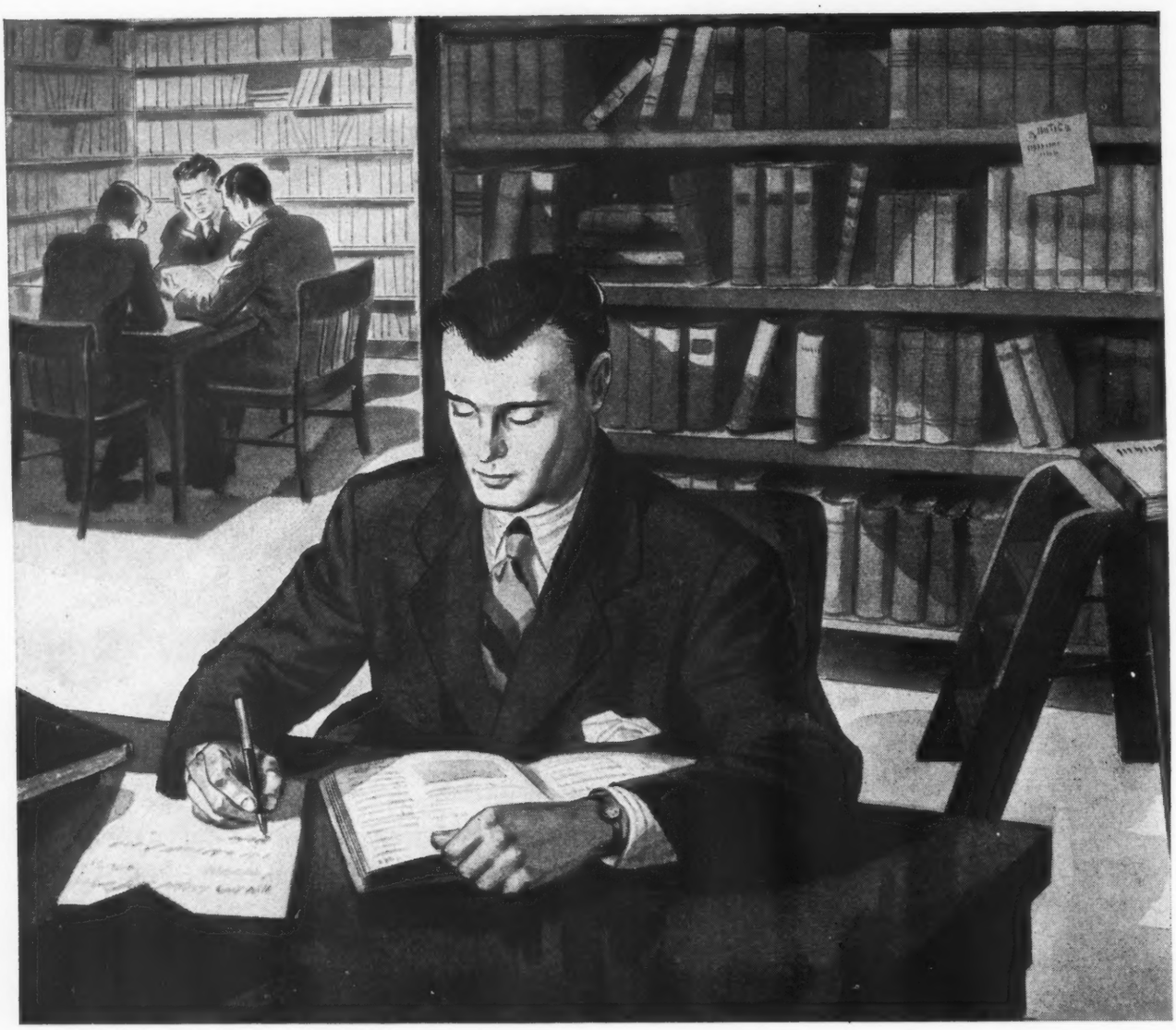
STRAPPING TOOLS
A—Large
B—Small
C—Medium

Production has been mainly taken up with Government demands but that condition is now changing and the shipping requirements of any user will receive every attention that it is possible to give them. The needs of each user will be separately and specifically considered. Consultation is invited and will incur no obligation.

AMERICAN STEEL BAND COMPANY

PITTSBURGH, PA. ESTABLISHED 1891 PLANT, CARNEGIE, PA.

ROOFING • SIDING • VENTILATORS • DUCTS • STEEL STRAPPING • SPECIALTIES



"What kind of pollen has the turnip?"

The library of American Can Laboratories at Maywood, Illinois, gets questions like this all the time.

Here are some other questions this library answers from its more than 3650 scientific books, periodicals, Government bulletins, specifications, and trade journals:

"Give me a complete bibliography on DDT"..."how to can pineapple juice"..."standards for tomato juice cocktail"..."self-heating cans"... "how to prepare micro-crystalline wax"..."who cans mulberry juice?"

Very often our customers call up the library direct and ask their own questions, too.

This scientific library is a unique American Can service. Aside from the fact that it's the largest library in the canning industry and therefore the largest library of its kind in the world, its real value lies in this fact...

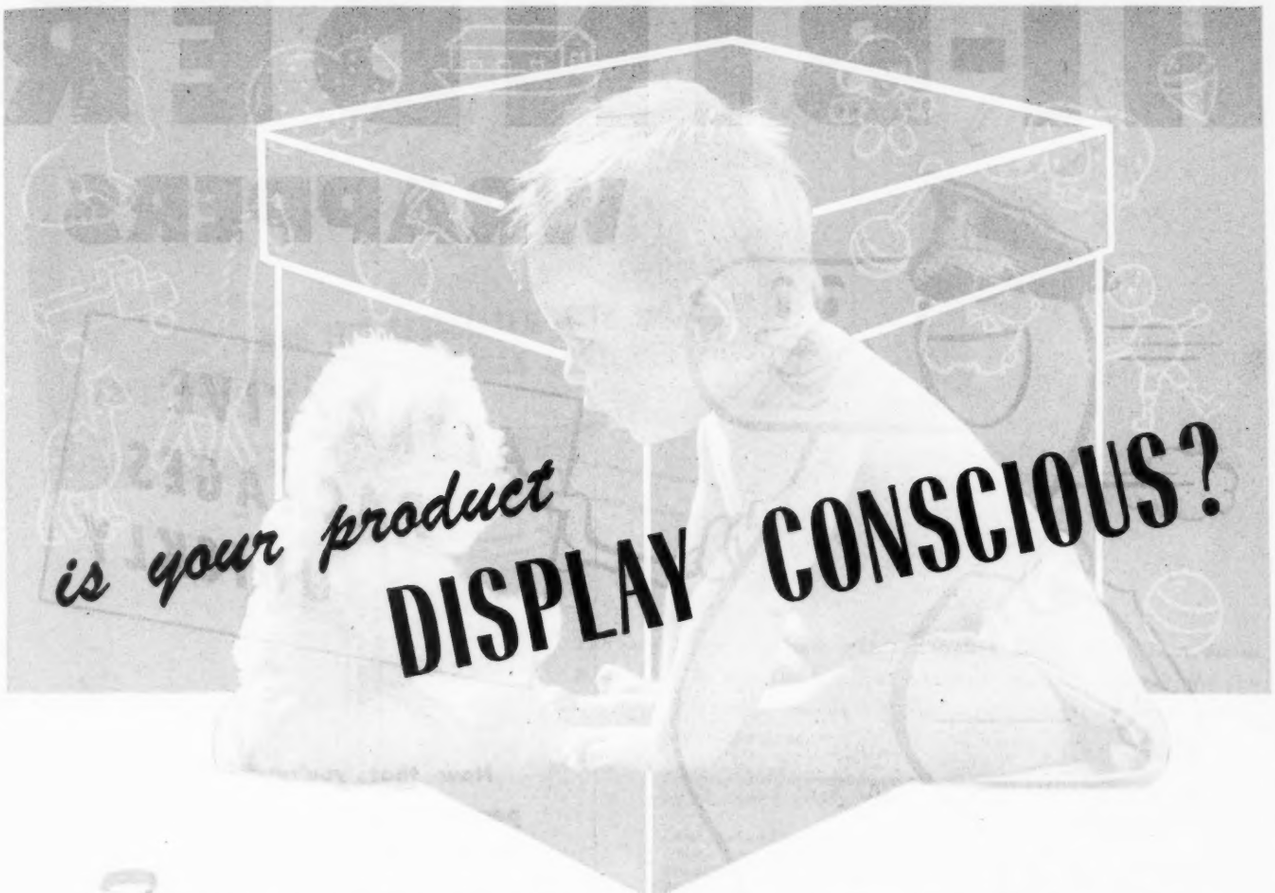
... it ascertains quickly what research *has* been done on a given subject; our workers pick up the problem from there and carry on.

This saves countless hours of valuable time. Hours which are freed for solving the immediate pressing problems of the industry.

The library is only one small facet of the many-sided research which we give our customers. And research is only one of the many types of broader help we offer them. Ask our representative to explain them all when he calls. Or write:

American Can Company CANCO New York • Chicago • San Francisco

DON'T FORGET NATIONAL BABY WEEK—APRIL 27 TO MAY 4!



is your product DISPLAY CONSCIOUS?

THE toy, game and novelty industry used 202 million set-up boxes in 1943* . . . that's an average of three out of four of all containers. So, if you are in that industry, it's a pretty safe bet you are now using set-up boxes.

And it's a pretty safe bet that they are one of your big sales incentives . . . of course, you also buy them for their inherent strength, economy, take-home value and shipping convenience.

That half billion dollar industry is looking toward a tremendous sales increase. New sales methods, production line assemblies, modern home construction and many new lines of mechanical wonder toys are all going to help . . . so are set-up boxes. They will display your product better, for based on consumer eye appeal per square inch and visual circulation, they are one of the most potent advertising mediums. If your product is display conscious, call your nearest set-up box manufacturer. Ask him for the latest survey (Dept. 35) "Toys, Games and Novelties Industries".

NATIONAL PAPER BOX MANUFACTURERS
Association

AND COOPERATING SUPPLIERS
Liberty Trust Building • Philadelphia 7, Penn.

FOR INFORMATION OR SERVICE • CONSULT YOUR NEAREST SET-UP BOX MANUFACTURER

HI-BINDER
WRAPPERS

Now that you're finally back in peacetime production, you want to be as certain of the regular flow of supplies as you are of the quality of your product. Immediately available stocks of HI-BINDER, in impregnated, laminated or coated paper, cloth, cellulose film or foil are at your beck and call.

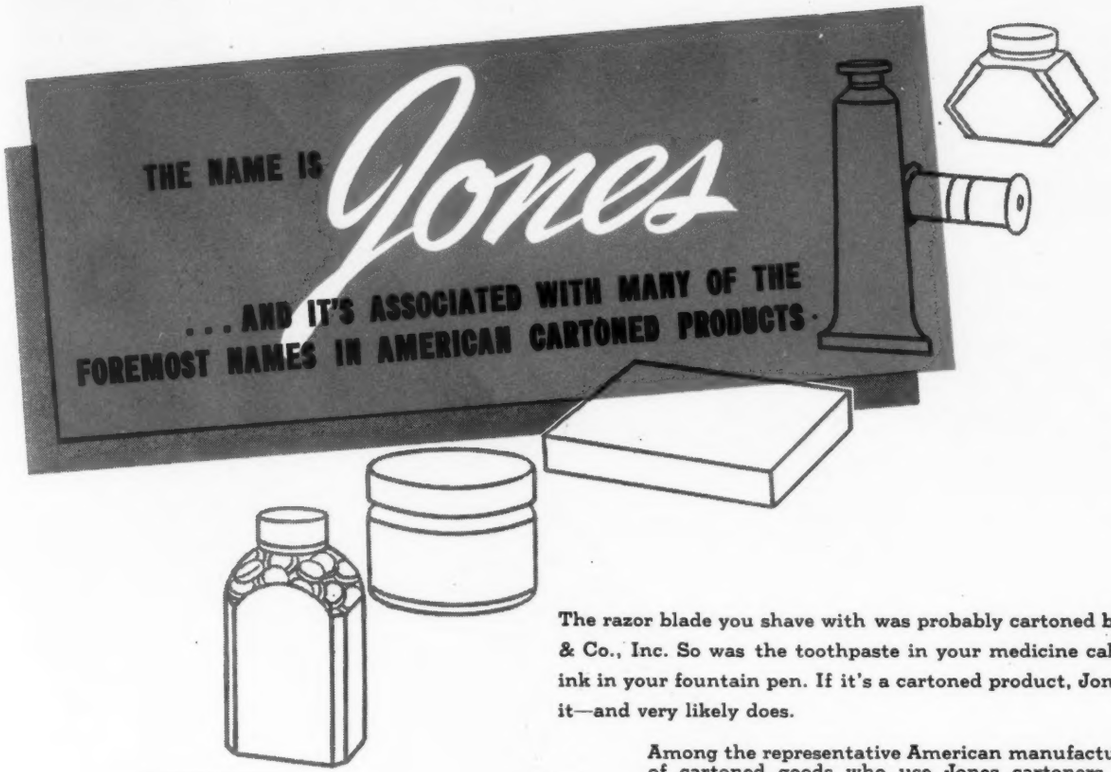
Our expert consulting service is available to assist you with your packaging problems. Write or wire us for more information about HI-BINDER, a war-born product with thousands of peacetime applications.

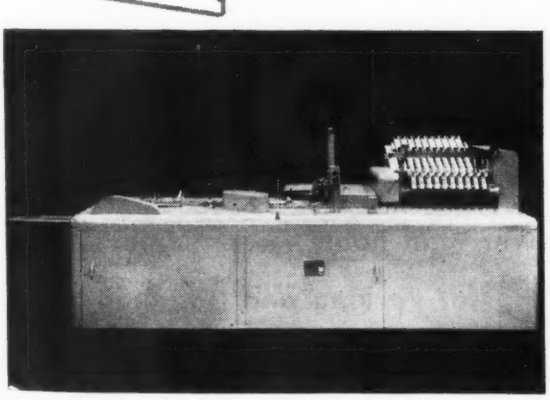
CONVERTED BY
THE FLOYD A. HOLES CO.,
BEDFORD, OHIO FOR

THE CENTRAL OHIO PAPER CO.

226 NORTH FIFTH ST. COLUMBUS 16, OHIO

ALSO IN **DETROIT, CLEVELAND, PITTSBURGH, DAYTON, TOLEDO, INDIANAPOLIS, CHARLESTON**





The razor blade you shave with was probably cartoned by R. A. Jones & Co., Inc. So was the toothpaste in your medicine cabinet and the ink in your fountain pen. If it's a cartoned product, Jones can carton it—and very likely does.

Among the representative American manufacturers of cartoned goods who use Jones cartoners are:

Lever Brothers Company
Gillette Safety Razor Co.
Bristol-Myers Co.
Procter & Gamble Co.
National Biscuit Co.
Pepsodent Company
Eastman Kodak Company
Lehn & Fink, Inc.
Parke, Davis & Co.
E. C. DeWitt & Company
Mentholatum Company
E. R. Squibb & Sons
Stanco, Incorporated
Upjohn Company
Menley & James, Ltd.
Barbasol Company
H. C. Glover Laboratories
Brillo Mfg. Co.
Consolidated Razor Blade Co.
Iodent Chemical Company
Mennen Company
Rit Products Company
Vick Chemical Company
Miles Laboratories, Inc.
Franklin Baker Division
Griffin Mfg. Company
P. Lorillard Company
Ex-Lax Mfg. Company
Colgate-Palmolive-Peet Co.
Chesebrough Mfg. Company
C. B. Fleet Company
Corega Chemical Company
Kilgore Mfg. Company
Campana Corporation
B. Manischewitz Company
Scholl Mfg. Company
L. E. Waterman Company
American Safety Razor Corp.
Kolynos Company
W. H. Marvin Company
Conrad Razor Blade Co.
Norwich Pharmacal Co.
Musterole Company
Seeck & Kade, Inc.
Walter Baker Company
Frederick Stearns & Co.
J. B. Williams Company
Kimberly Clarp Corp.
O'Cedar Corporation
Dr. D. Jayne & Son
Petrolagar Laboratories, Inc.
R. T. French Company
Newskin Corporation
Carter's Ink Company
West Disinfecting Company
Charles E. Hires Company
McCormick & Company
Pataganset Finishing Co.
Parker Pen Company
A. Schilling & Company
Manhattan Soap Co.

● Such a clientele cannot be the result of chance. It was built on the better performance that Jones cartoners give. If you are interested in the cartoner that has been ordered and re-ordered by so many outstanding producers of cartoned products, write to R. A. Jones & Co., Inc. for further information today.

R. A. JONES & COMPANY, INC.

P. O. Box 485 CINCINNATI, OHIO

"Package by Inland"

● Means proper balancing and
Scientific bracing and Cushioning
—and fewer man hours
for Packing and Handling

INLAND
CONTAINER CORPORATION
Corrugated Fibre Boxes

INLAND BOXES

Sales Offices: INDIANAPOLIS, IND. • EVANSVILLE, IND. • MIDDLETOWN, OHIO • CINCINNATI, OHIO
DAYTON, OHIO • CHICAGO, ILLINOIS • MILWAUKEE, WISCONSIN • DETROIT, MICHIGAN

S/V Product 2305 Provides a Strong Bond —and a Barrier Against Moisture-Vapor

This marriage between a sulphite and a glassine sheet is made to last, no matter what stresses future packaging applications may bring.

The binder is a strongly adhesive, easily applied microcrystalline wax—S/V Product 2305—that firmly bonds both sheets. Inherently flexible, this tough wax allows folding, creasing and scoring during package manufacture without fracture of its thin film. Even at low temperatures the flexibility and moisture-vapor resistance are maintained—an important factor in packages for frozen foods.

Highly resistant to moisture-vapor, this wax possesses marked advantages over water-soluble binders because it provides a moisture barrier that protects the goods it encloses.

S/V Product 2305 can help you with your laminating needs. Get the story of its application from your Socony-Vacuum Representative.

Process Products
SOCONY-VACUUM

INVESTIGATE
SOCONY-VACUUM
PROCESS PRODUCTS
Research and Service

What's New in Petroleum for PACKAGING!

FROZEN FOODS
S/V Microcrystalline Waxes
Impart flexible moisture-vapor proof coatings.

★

DEHYDRATED FOODS
S/V Microcrystalline Waxes
When used as coatings, keep contents dry.

★

CONTAINER LININGS
S/V Microcrystalline Waxes
Protect interiors of barrels, drums, tank cars.

★

BEER CANS
S/V Petrosenes
Give flexible inert linings.

★

HEAT-SEALING
Special Waxes
Produce tough, tenacious seals on paper.

★

EXPLOSIVES
S/V Waxes, Petrolatums
Waterproof and seal dynamite sticks.

★

HYDROFLUORIC ACID
S/V Cerese Waxes
Add strength to waxes used for containers.

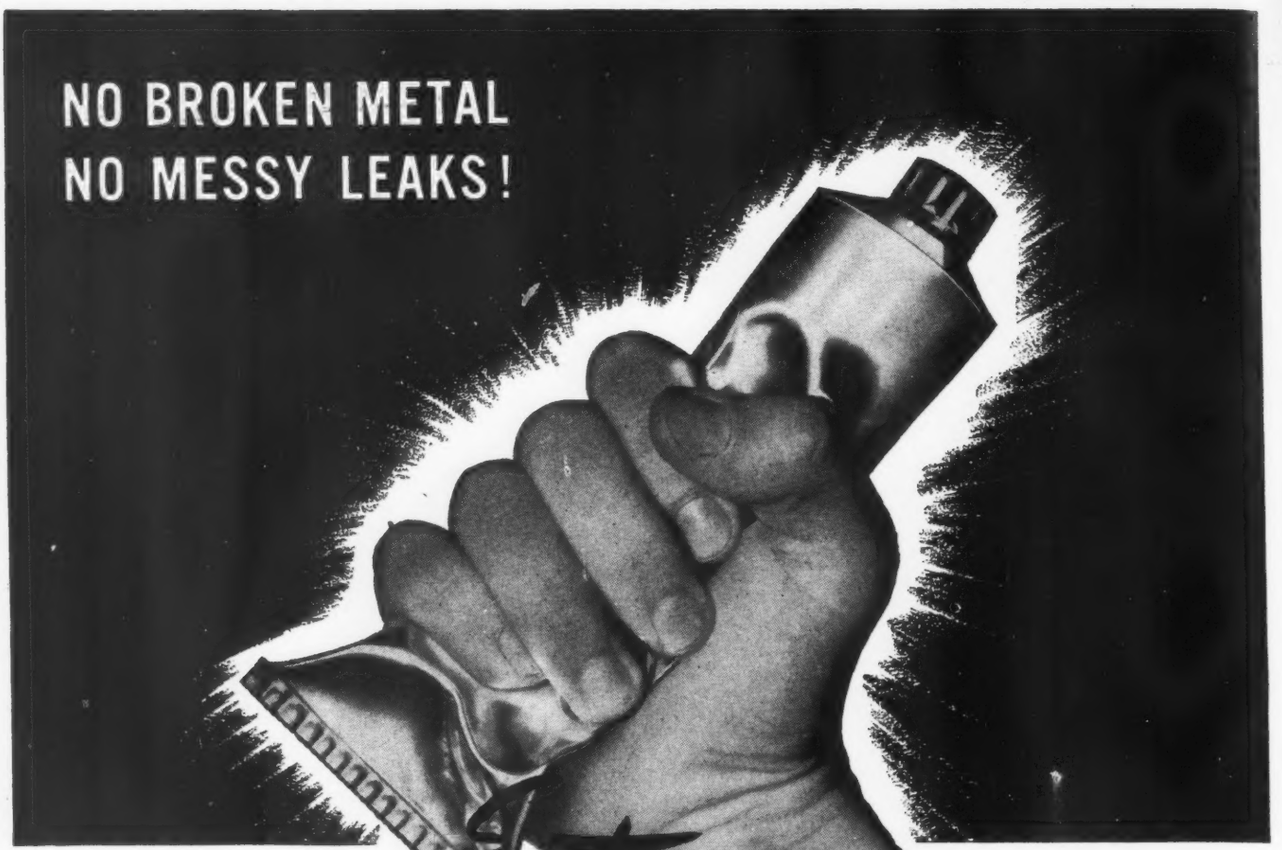
★

RUST PREVENTIVES
S/V Sova Kotes
Keep metals from rusting in storage.

SOCONY-VACUUM OIL CO., INC.
26 Broadway, New York 4, N. Y., and Affiliates: Magnolia Petroleum Company, General Petroleum Corporation of California.

Tune in "Information Please" Monday Evenings, 9:30 E.S.T.—NBC

NO BROKEN METAL
NO MESSY LEAKS!

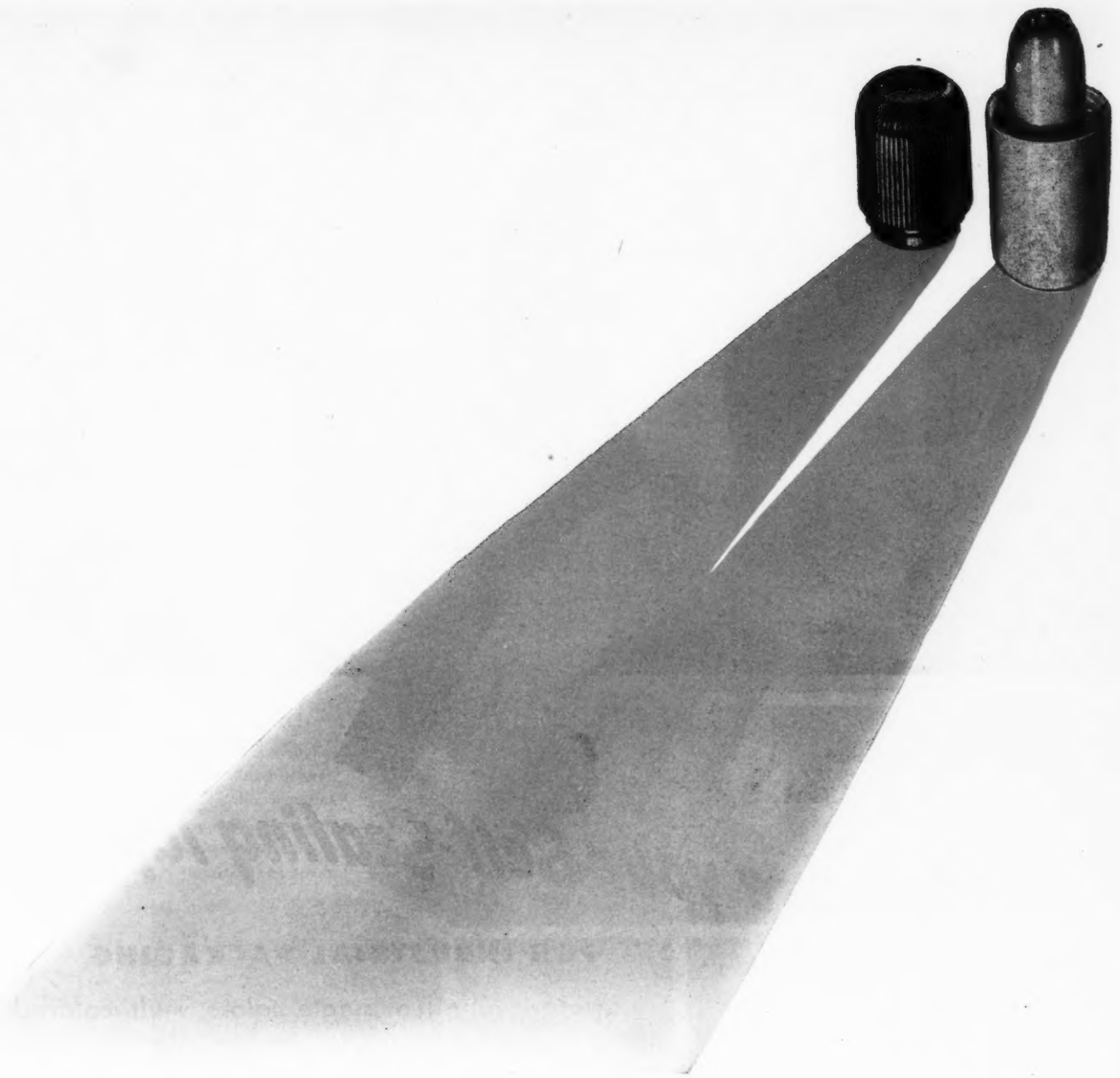


THERE'S *Extra* STRENGTH
IN EVERY TUBE

Most tubes take a lot of punishment. Everyone takes a turn at twisting, squeezing, bending, folding, until nothing but a mass of crushed metal remains. That's why it is so important that you specify the toughest tubes you can get.. SHEFFALLOY *"Sheffield Process"* Tubes. There's an extra margin of safety built in these better tubes. The metals are specially treated by our exclusive "Sheffield Process" of melting, mixing and tempering. The tubes are tough, sturdy, yet remain pliable. Safeguard the quality and prestige of your products, switch to SHEFFALLOY *"Sheffield Process"* Tubes. A phone call or letter to our nearest office will quickly bring you full details, without obligation.

Sheffalloy
TRADE MARK REGISTERED
SHEFFIELD PROCESS
TUBES

NEW ENGLAND COLLAPSIBLE TUBE CO.
3132 S. CANAL STREET, CHICAGO 16 • NEW LONDON, CONN. • W. K. SHEFFIELD, V. P., 500 FIFTH AVENUE, NEW YORK 18
THE WILCO COMPANY, 6800 McKINLEY AVE., LOS ANGELES 1



SMALL PLASTICS MADE IN A BIG WAY

Millions and millions of plastic closures are made in the Owens-Illinois factories each year.

Long experience in manufacturing closures, combined with vast research in the plastic development field, make us *specialists* in producing a great variety of small, thermo-setting parts and items in large volume with dependable efficiency and corresponding economy.

We will be happy to consult you about your particular plastic needs.

LOOK FOR THE DIAMOND

PLASTIC DIVISION

OWENS-ILLINOIS GLASS COMPANY

TOLEDO 1, OHIO BRANCHES IN PRINCIPAL CITIES

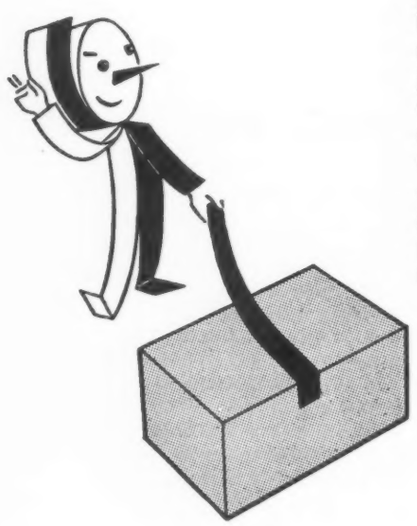
Here are your Self-Sealing Tapes

FOR INDUSTRIAL PACKAGING

Transparent, opaque, single colors, multi-colored
— in all widths from ½" to 18"

There is one particular FILMONIZE Self-Sealing Tape to meet each of your particular requirements. It can be cellulosic, paper or metal — to give you just the right strength and quality for each job. It can be of any width from ½ inch to 18 inches. It can be transparent or opaque. Your various tapes can be of various colors — for identification, or coding, or just for their attractive appearance. (These tapes may also be imprinted to carry a message, code, trade name or trade mark.)

The use of these tapes means quicker application, a neater job and sure, tight adhesion — a distinct saving in man-hours. On the colored (or printed) tapes, the ink is under the surface — does not rub off. Exclusive, patented, precision methods of manufacture have built a long list of satisfied customers for the FILMONIZE Line. We invite the opportunity to show you the many ways in which leading industrial and commercial firms are using these up-to-the-minute products that seal without water. Wire or write us today!



Filmonize
TRADE MARK REG.

SELF-SEALING TAPES

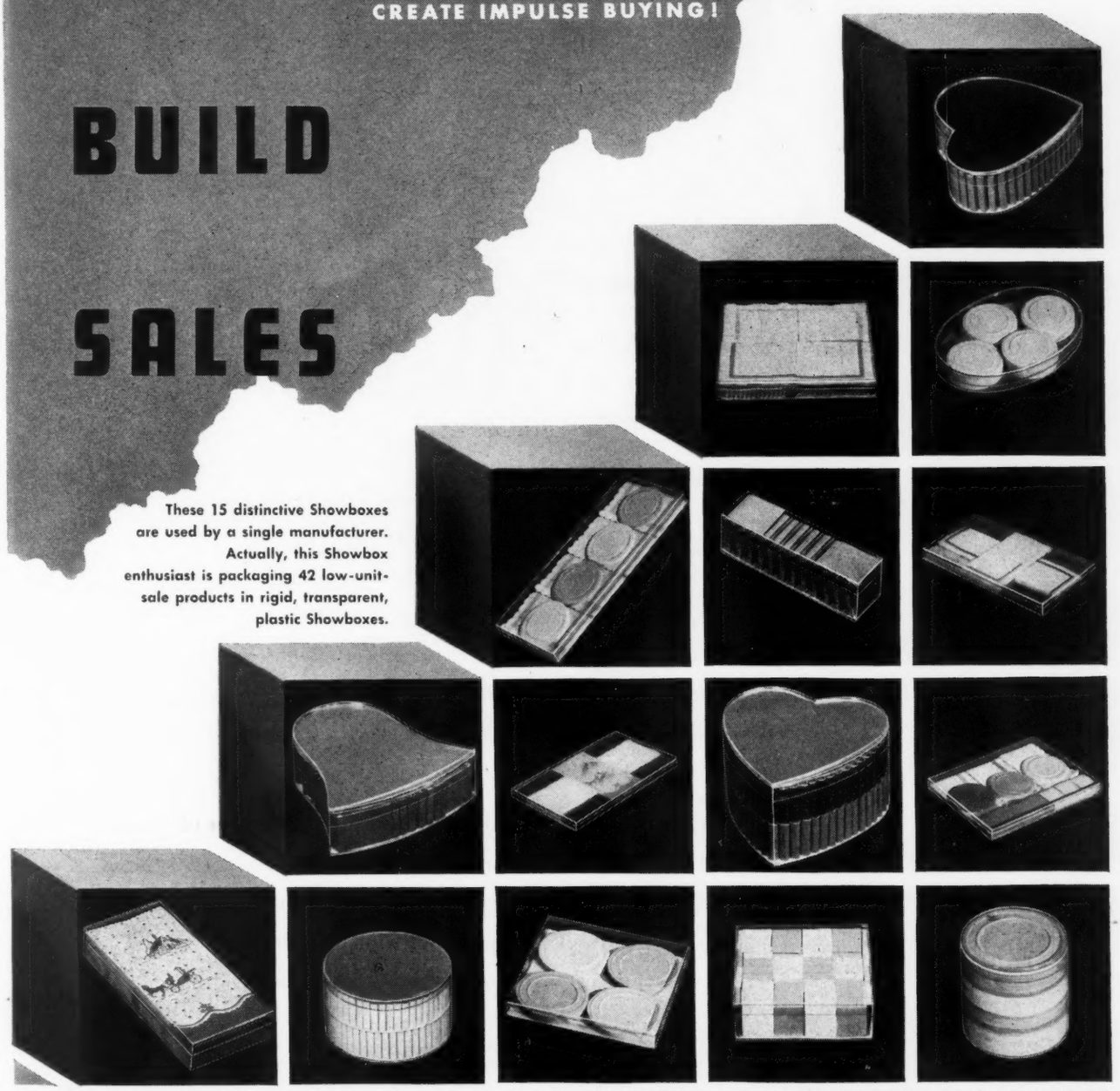
INTERNATIONAL PLASTIC CORPORATION
Morristown **New Jersey**

SEALS WITHOUT WATER

SHOWBOXES

CREATE IMPULSE BUYING!

BUILD SALES



These 15 distinctive Showboxes are used by a single manufacturer. Actually, this Showbox enthusiast is packaging 42 low-unit-sale products in rigid, transparent, plastic Showboxes.

Sales-stimulating Showbox success stories include practically the entire range of commodities on the American retail scene. Everything, from penny candies in display containers to elegant jewelry in equally elegant Showboxes, are winning top attention everywhere. There is no finer point-of-sale advertising than your attractive product proudly packaged in a Showbox.

SHOWBOX

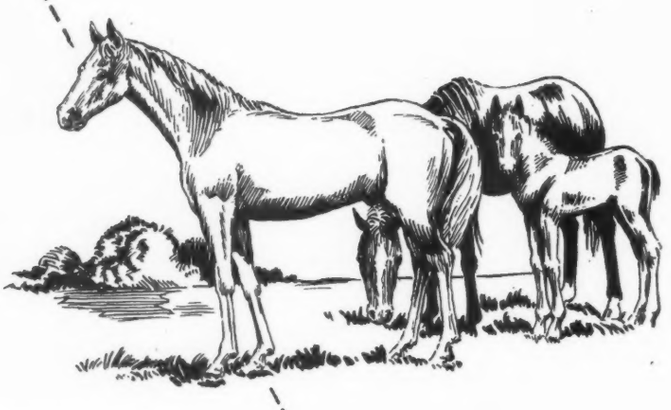
DIVISION OF
CENTRAL STATES PAPER & BAG CO.
2600 N. Broadway St. Louis 6, Missouri, U. S. A.

CHICAGO
520 N. Michigan Ave.

NEW YORK
489 Fifth Avenue

DETROIT
1951 East Ferry St.

WHAT MAKES A THOROUGHBRED ?



A few Arabian stallions were imported into England over two centuries ago.
They possessed exceptional endurance and beauty.
By mating these Arabian horses with carefully selected native mares
of greater speed, size, and length of stride, a type of horse was developed
which combined all these qualities to an unmatched degree.
This was the beginning of the Thoroughbred.
Controlled breeding over the years has further improved the speed,
endurance and courage of these early Thoroughbreds.

We at Carr-Lowrey have devoted years to developing the methods
and materials for making finer glass containers.
Constant adherence to the idea of "not how much,
but how well" has earned for us the confidence of the
buyers of "extra quality" glass containers.

CARR-LOWREY GLASS CO.

Factory and Main Office: BALTIMORE, MD. • *New York Office:* 500 FIFTH AVENUE • *Chicago Office:* 1502 MERCHANDISE MART

Traver offers packaging "KNOW-HOW!"

FROZEN FOODS

FROZEN FOODS

● Self service—with 50% impulse sales—makes self-selling packages a must! Traver multi-printed cellophane meets every requirement of product protection, display, and descriptive information!

LINGERIE—HOSIERY

LINGERIE—HOSIERY

● Glamor for the shopper—garment protection and selling ease for the store! That's why so many successful merchandisers of lingerie—hosiery—gloves—accessories—are having their cellophane packagesdesigned and multi-printed by Traver!

CONFECTIONS

CONFECTIONS

● Bar, Bag, or Package! Cellophane, glassine, or metal foil! Traver packaging insures your product perfect sanitation and protection, plus Sales Punch aplenty! Made for either hand wrap or automatic machines.

BAKERY GOODS

BAKERY GOODS

● Freshness sealed in—dust and moisture excluded—yet the appetizing goodness of your product has 100% display! Let Traver "know-how" design a package that gives you all this—plus SALES PUNCH!

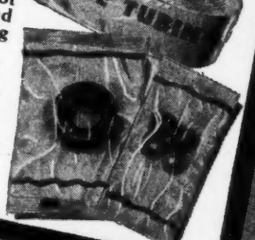
INDUSTRIAL PLANTS

"-SIZE" CELLOPHANE TUBING

2" to 20" wide, 1000 foot reels. Cut to any size bag, and heat seal! Cutting and sealing equipment available.

"TITE SEAL"

Cellophane bags, prefabricated to desired size, printed or unprinted. Heat seal—and you have protection, identification, and convenience for 100 factory uses!



MEATS

MEATS

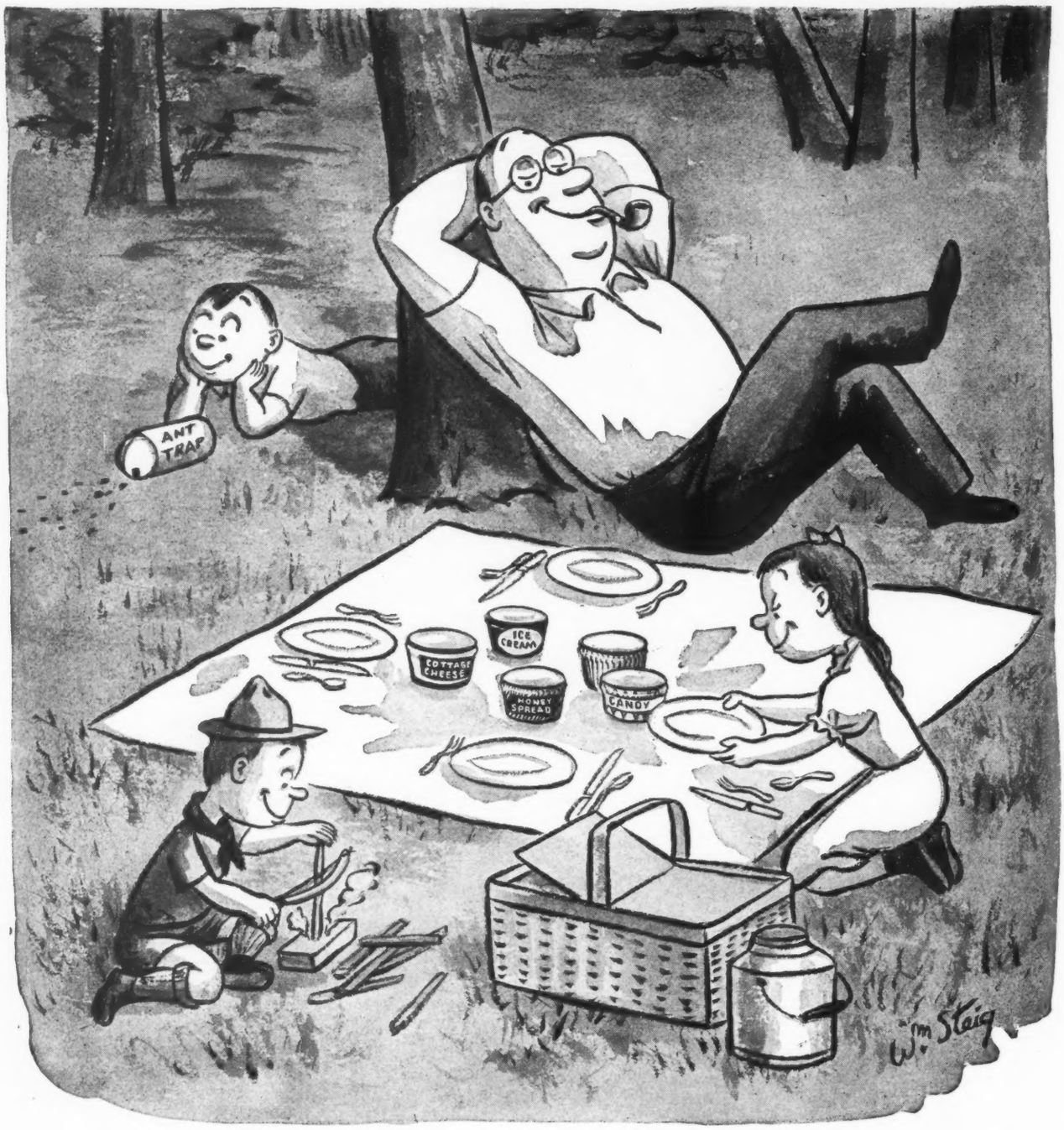
● A multi-printed Traver wrap of transparent film works wonders in selling meats! That wrap says to the customer "you can see the meat you're buying, the brand name, the price, and the weight! Yet the meat is protected from all possible contamination!" The modern way of merchandising!

Traver CORPORATION

Offices in principal cities—reply to
336 West Ontario Street • Chicago 10, Illinois

PACKAGING THAT SELLS!

CONVERTORS OF CELLOPHANE, GLASSINE, FOILS, ACETATES, PEARLON-PLASTIC FILMS, PROTECTIVE PAPERS



"The bigger the family—the better the service"

CONTINENTAL CAN COMPANY, INC.

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FIBRE DRUMS The Container Co., Van Wert, Ohio

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PAPER CUPS AND FOOD CONTAINERS — Mono Containers Newark, N. J.

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For the best of service, for the best of paper packages, keep your eye on Continental. Our Paper Division manufactures containers of all kinds—liquid-tight cups, fibre cans and drums—in a variety of types and sizes. Whichever you use, you'll find Continental packages will carry your product safely and surely. And when you see the Continental Triple-C trademark, you know you're getting the best in quality, best in service, too.

DRESS YOUR HOLIDAY PACKAGES IN KUPFER FESTIVE PAPERS

IT'S TIME NOW TO PLAN YOUR HOLIDAY LINE.

KUPFER designers add dash and verve to your boxes, your packages, your wraps for all the big holidays right up to Christmas. Embossed color and foil combinations, foil paper, lace patterns, leather papers plus variations of the light motif on all types of stock give more meaning to the familiar holiday symbols.

SEND FOR SAMPLES AND CATALOG. CHOICE OF OVER 5000 PAPERS.

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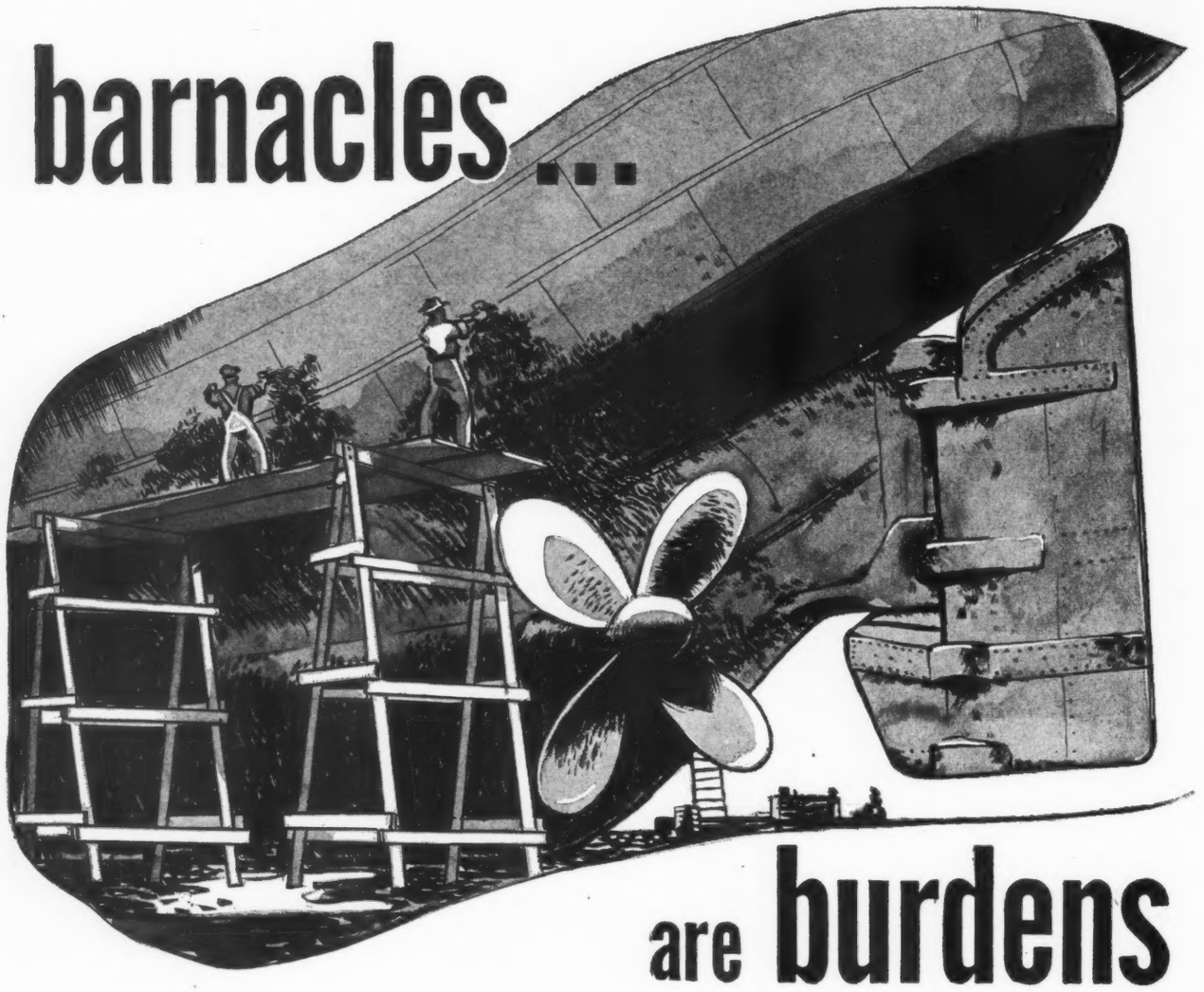
barnacles...



are burdens

"Barnacles" gathered during the war years are slowing down many packages in sales, production efficiency and economy . . . "Barnacles" such as worn-out machinery, poor product protection and make-shift packaging materials.

Scraping off these barnacles is going to be a longer job than most of us expected, but it is a job that can be made much easier by advance planning. Many new Riegel papers have been developed to help you. Unfortunately, few of them are now freely available, due to shortages in raw materials and to an unprecedented demand for our products . . . but we can discuss your problems now so that you may find a solution at the earliest possible date. Highly competitive markets are bound to return, and today is the time to plan for tomorrow.

600 RIEGEL Papers

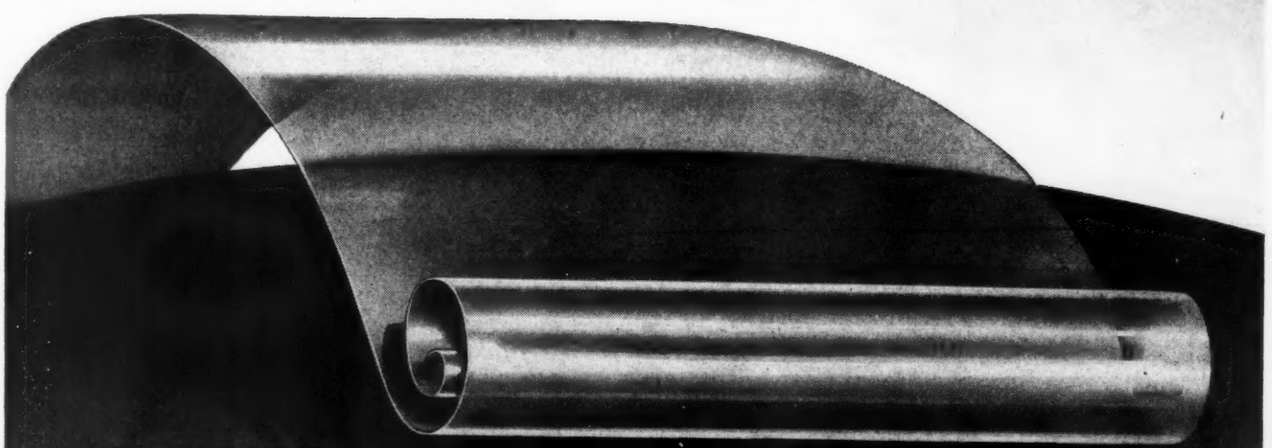
Riegel packaging papers include glassine, greaseproof, sulphite, wet-strength . . . printed, embossed, resin-impregnated, laminated, oiled, lacquer-coated, waxed, dry-waxed . . . as well as printing papers, converting papers and special industrial papers in endless variety.

RIEGEL PAPER CORPORATION • 342 MADISON AVENUE • NEW YORK 17, NEW YORK

WESTERN

For distinctive, modern packages

For unusual low pressure laminated plastics



PACKAGING AND PLASTICS

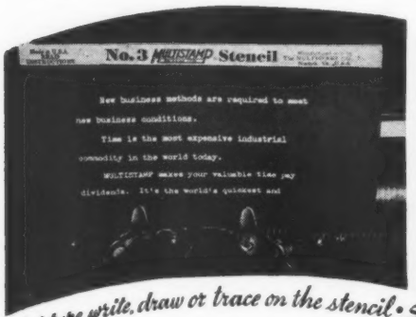
WESTERN PRODUCTS INCORPORATED

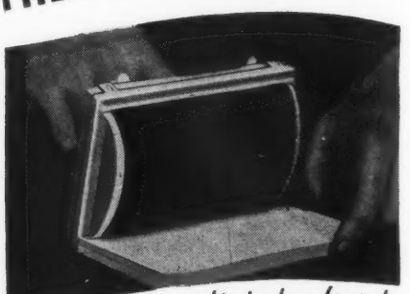
Creative Engineering in Packaging and Plastics

NEWARK, OHIO

CONVERTERS OF LAMINATED AND COATED METAL FOILS, TRANSPARENT FILMS, FABRICS, AND PAPERS

TYPE (write or draw) ON STENCIL SNAP IT ON.. THEN PRINT


No. 3 MULTISTAMP Stencil
New business methods are required to meet
new business conditions.
Time is the most expensive industrial
commodity in the world today.
MULTISTAMP saves your valuable time pay
dividends. It's the world's quickest and



Just type, write, draw or trace on the stencil • Snap it on Multistamp. Quick, automatic, touch no ink • Print on postcards, shipping tags, boxes, etc.

THE COMPLETE ALL-PURPOSE PRINTING OUTFIT . . . NO TYPE TO SET!

PRINTS ON WOODEN BOXES, CARTONS, SHIPPING TAGS AND LABELS, CLOTH

. . . AS WELL AS ON CARDS, PAPER, ON OR INSIDE BOOKS OR FILES, ETC.

1 Rubber Stamp Size for Shipping Tags, Labels, Cards, etc.

The No. 1 MULTISTAMP is a flexible rubberless hand stamp that takes the place of rubber stamps. Prints up to 5 lines of type, 3 in. long. Eliminates retyping and slow hand-addressing — it has a thousand uses around any office or shipping department.

Complete with supplies in attractive compact case. Weight: 2 lbs.

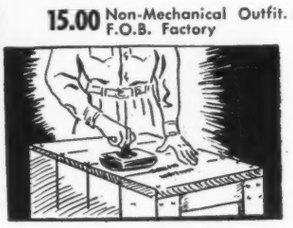
7.50 Non-Mechanical Outfit. F.O.B. Factory

3 Post Card Size for Larger Tags, Labels, Notices, etc.

The No. 3 MULTISTAMP is the "Rocker Type" Duplicator that prints on practically anything. Size 5¼ in. long by 3¼ in. wide. A single stencil can contain up to 32 lines of type. No experience required to operate MULTISTAMP.

Complete with supplies in handy, sturdy case. Weight: 4 lbs.

15.00 Non-Mechanical Outfit. F.O.B. Factory



Reg. U. S. Pat Off.

Every MULTISTAMP Outfit is Guaranteed for 5 Years! Write for Illustrated Folder Showing Other Complete Outfits for $25 to $82.50.

MULTISTAMP
STENCIL DUPLICATOR

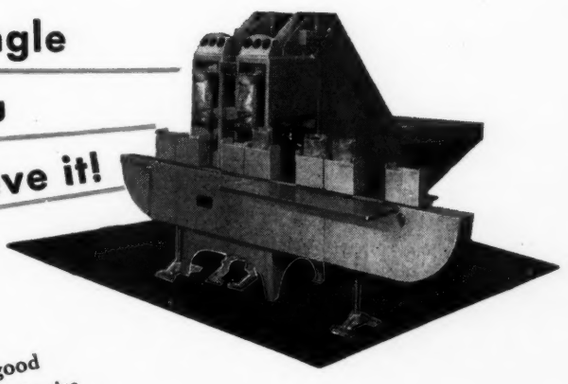
DEALERS: Write for our new liberal Dealer Plan

MANUFACTURED ONLY BY THE MULTISTAMP CO., INC. NORFOLK, VIRGINIA

25 Years of Dependable Service

a new high ...in packaging accuracy!

It's uncanny — this Triangle ELEC-TRI-PAK — you almost have to see it to believe it!



USERS of Triangle ELEC-TRI-PAKS are amazed at their extreme accuracy. One machine actually weighs and fills short pretzel sticks to accuracies within 2 or 3 sticks per 10 ounce package!

ELEC-TRI-PAKS are versatile too . . . they do as good a job on weighing rice as on sandwich cookies. They're fast, easy to operate, they save labor. So gently do they handle products that they're even used to package potato chips without breakage. And . . . they're available in a variety of models for packaging from 15 to 80 packages per minute, and more.

For a new high in packaging efficiency, reduced costs, time and labor savings, as well as almost unbelievable weighing accuracy . . . here is your answer . . . a Triangle ELEC-TRI-PAK. **Write for details . . . TODAY!**

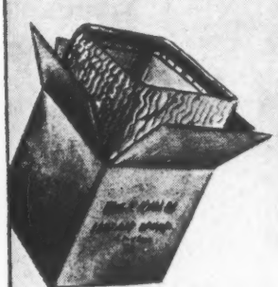
TRIANGLE PACKAGE MACHINERY CO.
907 NO. SPAULDING AVE., CHICAGO, 51, ILL.
Sales Offices in: New York; Los Angeles; Dallas; San Francisco; Denver; Cleveland; Birmingham; Memphis; North Quincy, Mass.; Montreal, Can.

For your packaging needs

Ralston

WATER-PROOFED PAPERS MEET EVERY REQUIREMENT

NO MATTER What measure of protection your products demand in shipping and storing . . . protection against water, moisture, grease, dirt, dust and other elements . . . we have a Ralston product (a waterproof paper, waterproof bag, barrel or case liner) that will do the job for you, effectively and economically.



- **Laminated Papers To Meet Gov't Specifications**
- **Saturated Papers**
- **Building Papers**
- **Creped Papers**
- **Duplex Papers**
- **Laminated Specialties**
- **Reinforced Papers**

W. Ralston & Co., Inc.
Niagara Falls, N. Y.

Founded 1890 — Incorporated 1918

SALES OFFICE, 220 E. 42nd ST., NEW YORK CITY

MOTHERS VOTE 3 to 1 FOR BABY FOOD PACKED IN GLASS!

Mothers voted nearly 3 to 1 for baby food packed in glass in a recent national survey conducted by a noted public opinion analyst.* Customer-preference for glass-packed food is the greatest sales *plus* in the food industry.

Here are the reasons women gave for preferring the modern glass package for this all-important purchase:

SAFETY:

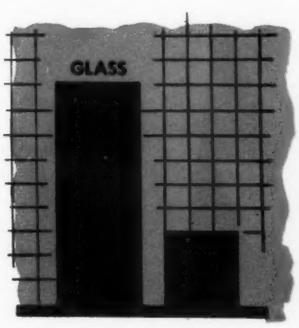
Food is cooked in own sanitary glass container—thus assuring absolute cleanliness and the full nutritional value. Food tastes better. Glass adds no taste of its own.

CONVENIENCE AND ECONOMY:

Busy mothers can heat food, serve it and store left-over portions in glass container. *No wasted food —or time...*double economy! Packages are so easy to open—so easy to reseal.

VISIBILITY:

Mothers trust what they can see. Color, amount and goodness shine through gleaming glass. Glass adds spick-and-span sparkle to shelves... shows when to buy more.



PREFERENCE:

More and more mothers are choosing baby food packed in glass-clean containers. The 3 to 1 preference is increasing! A vote like this makes preference mean demand!

Duraglas containers have all the advantages of glass packages and more. Their lightweight strength assures easy handling . . . their trim proportions mean compact storing . . . their natural beauty makes sparkling displays! Their nationally advertised name is known and respected by consumers.

You sell more, need less selling time . . . with food products packed in glass containers—Duraglas Containers!

*Name supplied upon request

ESPECIALLY IN Duraglas CONTAINERS

OWENS-ILLINOIS GLASS COMPANY · TOLEDO 1, OHIO · *Branches in Principal Cities*

Sefton

DOES AN *Unique* JOB FOR B. L. FRY PRODUCTS CO. OF ST. LOUIS

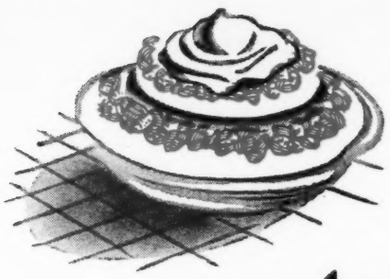
Sefton HAS DONE IT AGAIN!..

Sefton Fibre Can Company gives further proof of its ingenuity by creating a modern carrying case for a Junior-Pro Golf Set by the B. L. Fry Products Company. Handsome, and as practical, as any bag the pro's ever carried, it's an outstanding example of how Sefton can solve any and every packaging problem! Write or call Sefton today!

Sefton FIBRE CAN COMPANY

ST. LOUIS . . . . . NEW ORLEANS

DISTRICT OFFICES: • Los Angeles • San Francisco • Denver • Tampa • Chicago • Des Moines • New Orleans • Boston • Detroit • Kansas City • St. Paul Omaha • New York • Cincinnatti • Cleveland • Oklahoma City • Pittsburgh • Memphis • Nashville • Dallas • Houston • Salt Lake City • Seattle



"Strawberry shortcake tonight, yum yum!"

Yes, young lady, those strawberries will make a luscious dessert that will melt in your mouth. They're as good as they look because flavor stays safe, from garden to table, in Dobeckmun processed film packages or overwraps. Those attractively designed and decorated containers do the important double job of keeping foods right—and selling them—fast. *The Dobeckmun Company, Cleveland 1, Ohio. Branches at: Boston, Chicago, Cincinnati, Los Angeles, New York, Philadelphia, San Francisco and Seattle. Representatives everywhere.*

DOBECKMUN

Self-selling packages in processed films and foils

FRESH...

Fresh—that's exactly what your product *should* be when it arrives at its final destination.

And that's what it *WILL* be if it goes in a Royal Flav-O-Tainer package—a patented duplex, flexible container made with heavy paper outside, and an inside liner of Pliofilm, Cellophane or any other thermoplastic film *completely heat sealed on all seams.*

If your product needs protection, Royal's art and package designing department will be glad to create for you a beautiful and effective container using any of the available Royalflex films.

For fifty one years, a Royal package has provided *outside evidence of inside quality.*

THOMAS M. ROYAL & COMPANY • *Philadelphia 20*

BOSTON • CHICAGO • SAN FRANCISCO • BEAUMONT • ATLANTA • PITTSBURGH • NEW ORLEANS
DENVER • SEATTLE • NEW YORK • ST. LOUIS • DAYTON • DETROIT • SYRACUSE • BRYN MAWR

Custom-cut BY A GIANT SHEAR . . .

Marked with your order number, the steel plate is cropped into required lengths by the gate shear.

STEEL FOR RAPID, SAFE FILLING ON THE LINE!

● Tailored to your order is the heat-tempered steel plate for the *sturdy steel cans* that guard your *products.*

That's one reason why manufacturers can rely on steel containers to meet their particular packaging requirements. Light and compact for easy handling . . . durable for protection against breakage, steel cans are ideal containers for production-planned, volume packing operations. Cans made of *crush-resistant steel* are proof against the hazards of rapid automatic filling . . . cut out the danger of bottlenecks due to breakage or jamming on the line. And products packed in *sturdy, lightweight steel* containers can be rapidly and safely packed in shipping cartons . . . economically shipped to market.

In retail stores, can-packed merchandise saves shelf and storage space and cuts down handling costs. What's more, for most products, consumers overwhelmingly prefer the easy-to-handle steel container that conveniently delivers your merchandise and is easily disposed of after use.

Yes, for easy, safe handling . . . from packing line to point-of-use . . . pack your products in *shatterproof steel cans.*

Major Reasons for Packing Products in Cans

1. Cans won't break, crush or tear.
2. Are air-, light- and moisture-proof.
3. Lower filling, shipping and handling costs.
4. Display effectively . . . ideal for colorful lithographed labeling.
5. ***Nationally Advertised*** . . . more than 30,000,000 full-page, full-color ads this month are promoting products packed in cans.

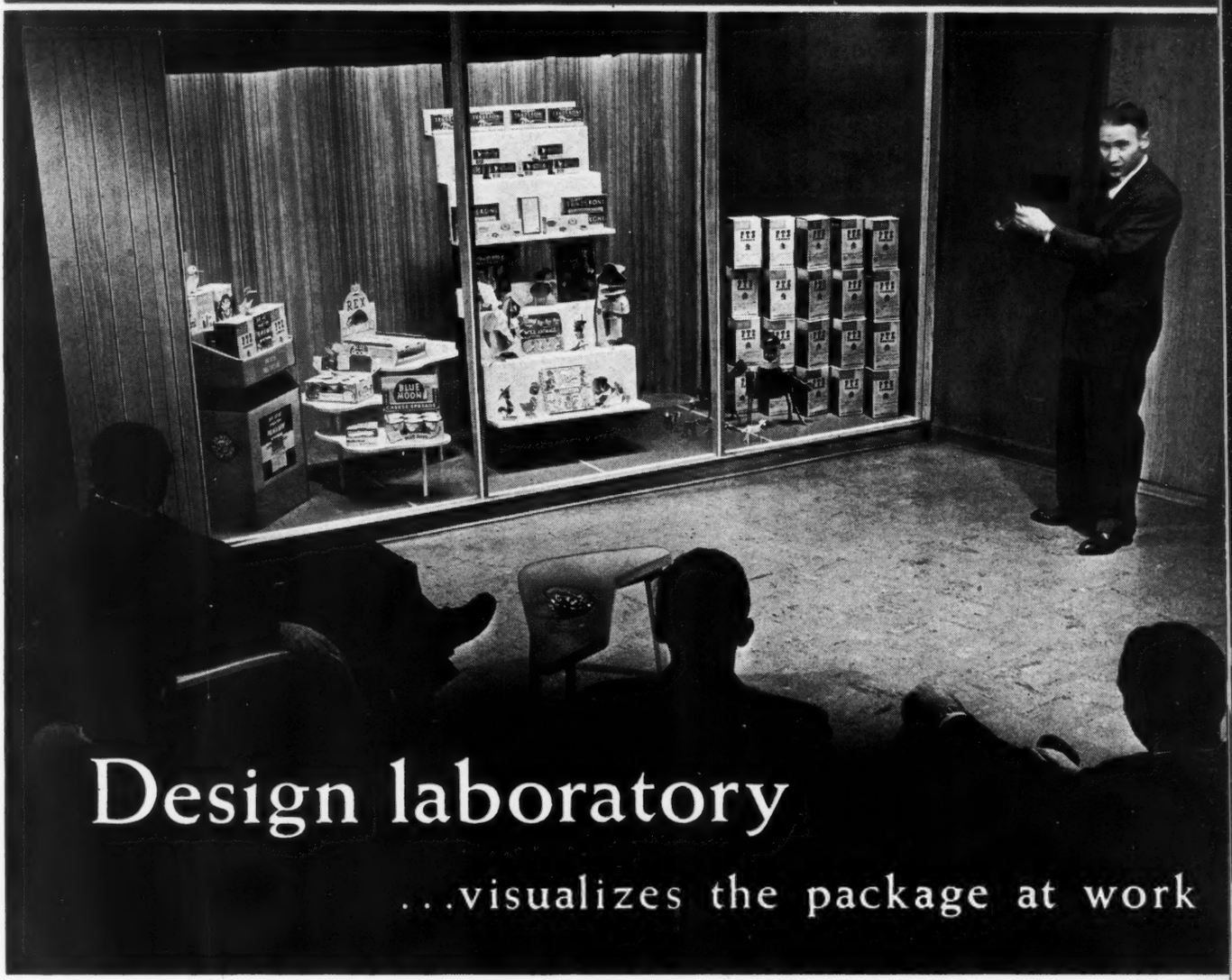
CAN MANUFACTURERS INSTITUTE, INC., NEW YORK

NO OTHER CONTAINER PROTECTS LIKE THE CAN

At the bottom of our trade mark are six words which very briefly state our business and our business policy. . . . We convert papers and transparent film into the materials you use for packaging. Our processes include waxing, coating, gumming, printing, embossing and laminating. . . . We are *big* enough to assure you an economical and unfailing source of supply. We are *old* enough in experience. We're *selfish* enough to be jealous of Nashua quality and uniformity. And we are *wise* enough to know that the only way to keep customers is by keeping them everlastingly satisfied. We want to show you how we can make paper make money for you.

NASHUA GUMMED AND COATED PAPER COMPANY, NASHUA, N. H.

MODERN PACKAGING
VOLUME 19 APRIL 1946 NUMBER 8



Design laboratory

...visualizes the package at work

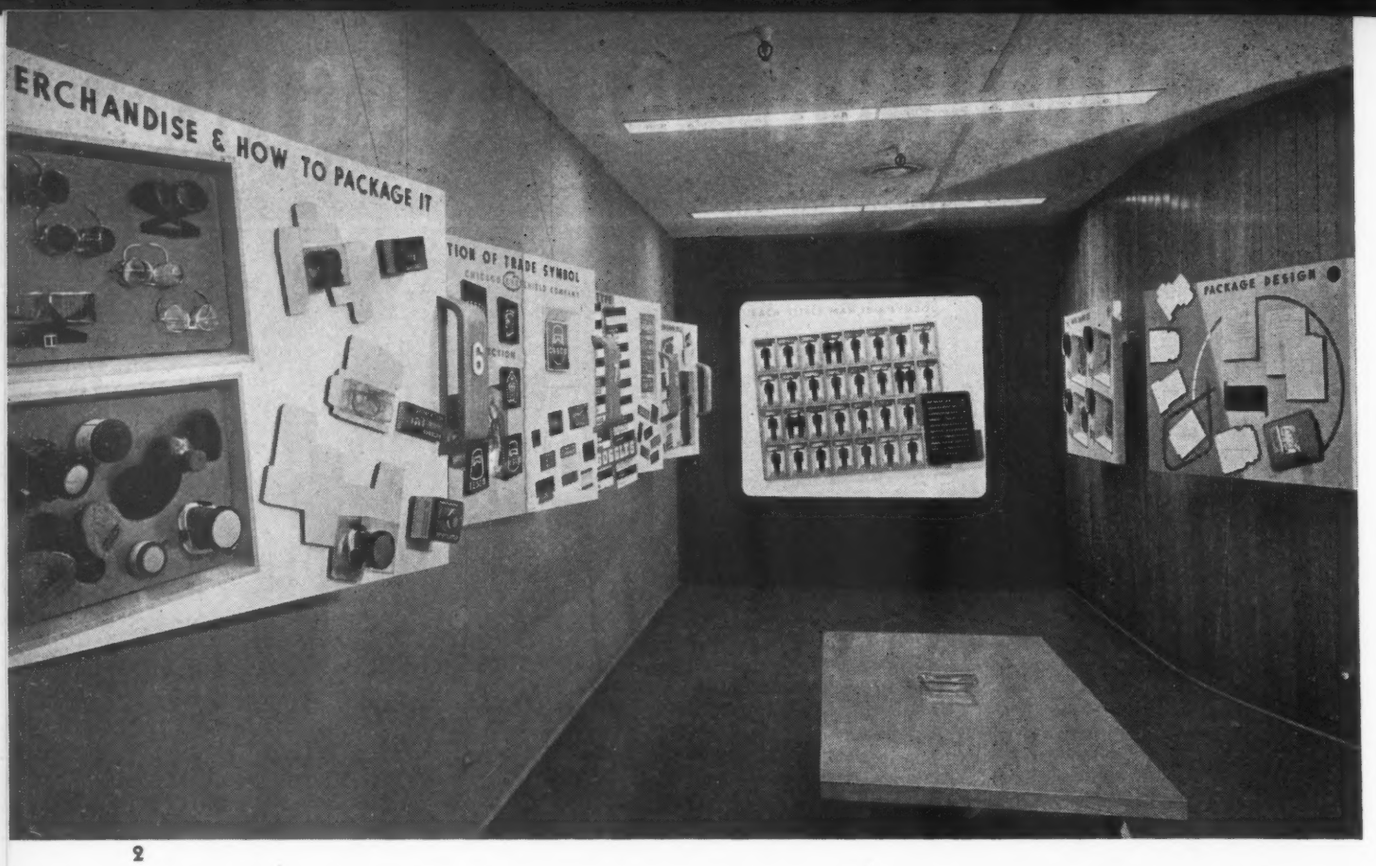
1—In Container Corp.'s design laboratory clients inspect proposed package designs in model store window, testing visibility and possibilities for mass display. Lighting duplicates that of the average store window.

"Through national advertising and modern retail merchandising methods, the shelves and window of the retail store have become the scene of the most bitter and continuing competition. It is there that the manufacturer's package fights the ultimate battle for the consumer's dollar. The thousands of words written and spoken in behalf of the product have done their part; now it is up to the package to attract the eye and induce the purchase. And the major responsibility for attracting the eye falls upon the printed design of the package. . . ."

The key function of the package in today's merchandising picture is thus summarized by Container Corp. of America in citing the accommodations and services of the new package design laboratory established by the company at its 35th St. folding carton plant in Chicago.

By means of specialized facilities and equipment, this laboratory makes possible the objective study of packages and packaging principles under conditions closely paralleling those faced by a package in competitive selling. In addition to a testing laboratory, the complete setup includes an exhibition gallery, art department, package engineering department, black and white drawing department and a room housing special sales training facilities.

Like the rest of the design laboratory, the testing laboratory is attractively modern in decor, with recessed fluorescent tube lighting and comfortable appointments. The room will seat about 20 persons, although the usual attendance at testing sessions runs considerably smaller, consisting principally of top sales and advertising executives of organizations for which package design or redesign programs are under



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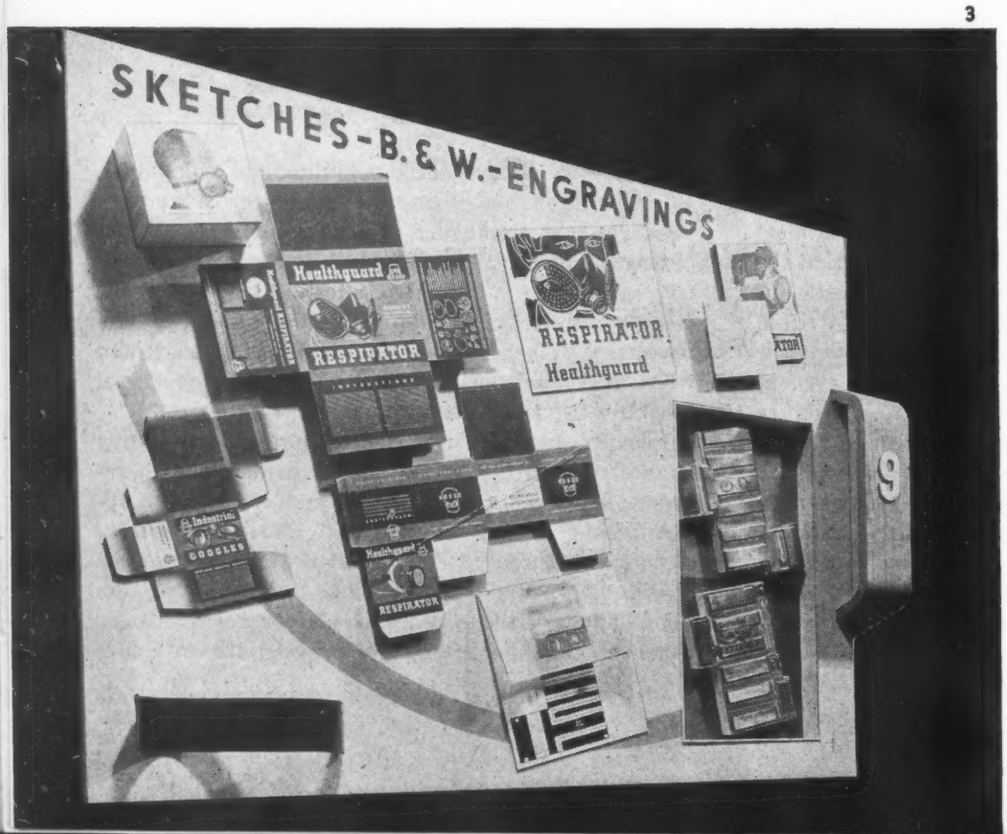
2—Exhibition hall of laboratory features, in one wing, graphic displays showing step-by-step development of package structure, trade symbol and lettering for a typical product. Client can study these at leisure.

way. It contains a model store display window and retail store shelves which simulate actual market practice, affording an intimate study of comparative package values as they might be impressed upon a typical consumer.

With test packages and competitive packages displayed side by side as they would appear on a supermarket shelf or in a drug-store window, an accurate cross-section of reaction by sales and advertising representatives viewing the demonstration can usually be obtained. Instead of being observed as isolated units, suggested new designs on test in the laboratory must fight for attention and approval flanked by their potential competitive cartons. By using numerous reproductions of a new package, it is also possible to experiment with a variety of display methods to check the versatility of the design and explore the possibilities for rhythmic repetition of brand name or trade mark.

3

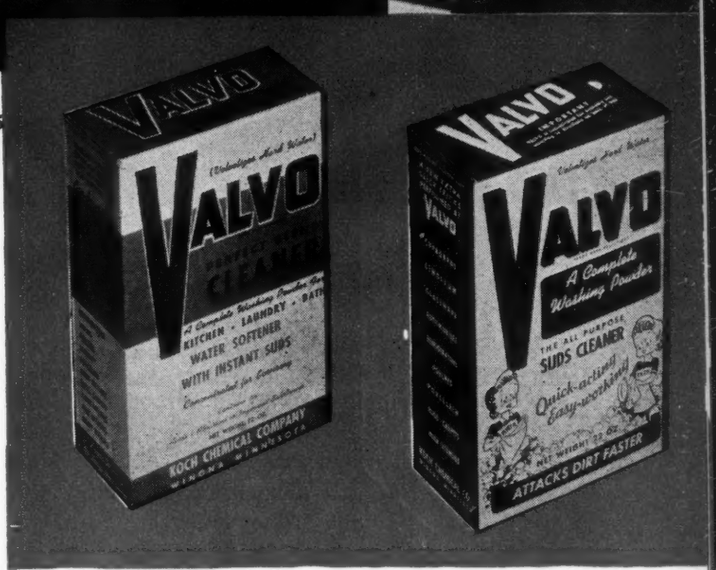


3—A close-up of one display board, showing steps from artist's sketch through the black-and-white drawing to final engraving.

(*Page 96*)

4

4—Ingenious machine which tests relative readability and visibility of old and new packages. Light is gradually diminished to point where one image grows indistinct. **5**—*A close-up of old (left) and new packages shown in machine above. Note how legibility of all lettering has been improved in new.*



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More specific carton analysis is afforded by two ingenious mechanical devices developed at the laboratory. One of these machines measures relative package visibility and the other is employed to test public reaction to different package designs.

In the package legibility test (Fig. 4) the cartons to be evaluated are placed at one end of the apparatus and their images are projected full-size on a ground glass screen at the opposite end, where they are easily viewed by members of the test group. The machine is equipped with rheostat controls so that the illumination reaching the screen can be adjusted to any desired intensity. In a typical test, the light is gradually diminished until the image of one or both of the packages begins to grow indistinct. A comparison of this kind quickly singles out a container on which the trade name or other essential copy is too small to show up clearly under poor lighting conditions, or lacks the

6—Exhibition hall is like an art gallery. Before-and-after displays demonstrate bad and good design. Technical considerations of design and printing are explained.

6

7

7—In engineering section of the new laboratory structural details of package are determined after study of product. Engineers work from samples of 450 carton styles, 35 boards.

requisite contrast with background colors used on the package.

The second package testing device contains four separate sections which may be lighted individually or in any desired combination by means of a multiple-selection remote control switch. Competitive packages or cartons in the test stage are placed in the different sections and illuminated momentarily to weigh their relative recognition value. The period of lighting may be varied by the operator. It is customary to begin the test with a very short exposure which is gradually lengthened as the trial progresses. During these tests, women employees from the carton production plant, located in the same building, are often brought in in groups to serve as judges. Results of the tests, carefully tabulated and studied, provide a very dependable index to the comparative visual appeal of the packages shown.

Another feature of the research laboratory is a series of five wall-mounted frames for Kodachrome transparencies showing "before and after" package case histories. Each panel contains six transparencies, illuminated from behind by concealed fluorescent lamps.

Lighting of the panels is controlled by individual switches, so that they may be studied individually or in combination. The frames are arranged in such a manner that color transparencies illustrating any desired type of packaged products may be slipped readily into position, according to the particular interest of the group using the laboratory facilities. The display shelf and show window contents are likewise varied to meet the interests of different clients. For example, if the line of packages under study will be used for such items as crackers and cookies, the shelves are filled prior to the session with current, proposed and competitive packages for this particular kind of merchandise.

Opportunities to work out fundamental problems of carton construction and design are not limited to the research department of the package design laboratory. The exhibition gallery, devoted to a dramatic visual exposition of technical problems, graphically portrays the development of a package from art work to finished product. A score of display panels in the gallery cover such points as package redesign, including the modernization of treatment without impairing established recognition value or the creation of a basic trade mark to be applied to a variety of packages for different products made by the same company. Other panels illustrate the processes of plate making and printing, and explain the approach to a printing problem, whether in two colors or more.

Effective package design, it is emphasized throughout the displays, properly embraces the problems inherent in the manufacture of the package itself. If the container is to be a practical and economical merchandising instrument, the creators of printed and structural design must have a mutual understanding of each other's particular problems.

Another point inherent in the display panels is the fact that the art problem, *per se*, is never the primary consideration in designing or redesigning a package. Instead, the initial effort is directed at the merchandising problems which the package must meet, and the matter of correct package construction. As an illustration, if the construction decided upon calls for a carton with interlocking ends, so that the end surfaces of the package are not in one piece, then any printing to appear on the ends must be laid out on the blank in such a way that overlaps or possible misalignment will not impair the legibility of the reading matter.

Displays in the exhibition gallery impress upon the

package user the great number of persons who must pool their skills to produce a package that will "deliver the goods" both protection-wise and as a merchandising medium. To those who think the creation of a sales-winning carton is just a matter of commissioning an artist to dream up a pretty picture, it may come as somewhat of a surprise to learn that as many as 30 individuals and groups have a hand in the process. These include—to cite only a few—the package engineer, layout man, photographer, estimator, black and white department artists, compositor, proofreader, engraver, electrotyper, diemaker, and make-ready man.

In the Container Corp. package design laboratory, the package engineering, art, and black and white drawing departments perform specific tasks in the development of a new package. First the package engineering personnel study the product to be packaged and select the combination of style or structural design and the grade and weight of boxboard which will produce maximum efficiency. Their work is facilitated by a collection of 450 indexed carton style models and 35 grades of boxboard in a broad variety of weights.

Following the determination of proper package construction, basic design work is performed by the art department, and is passed on to the black and white drawing department, where it is translated into terms of actual engraving and printing. This department does not merely trace the original of the art work, but

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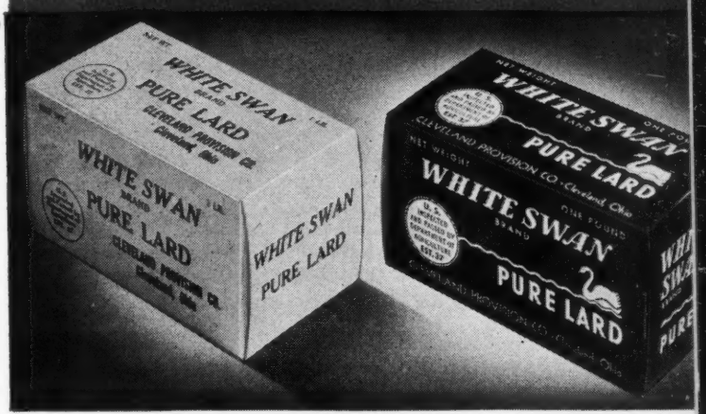

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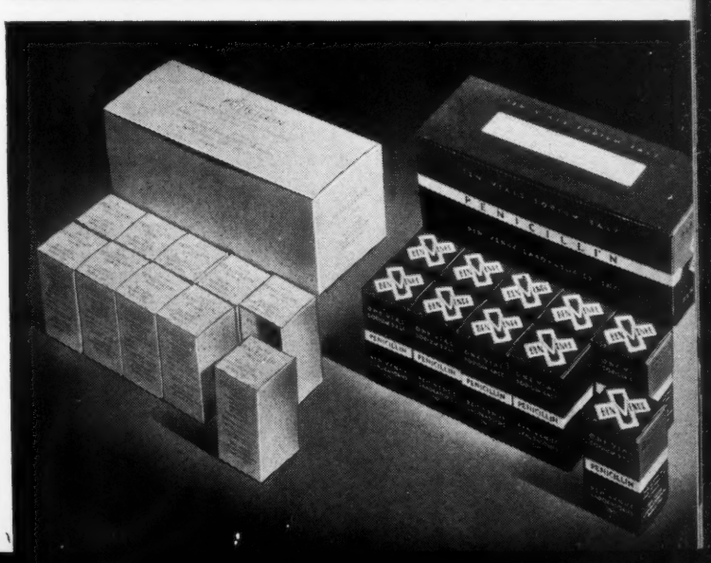

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8—Old package for Tenderoni appeared small and illustration of cooked product on fork caused some customers to complain at finding no fork in package. Shape of new package makes it look bigger and illustration of product in simulated window leaves no doubt as to contents. **9**—*White background of former White Swan package soiled easily and type arrangement and legibility were far from ideal. White reverse on new dark blue background spotlights important items, and white swan promotes identity.* **10**—*In old display carton for Blue Moon spreads, name and identifying blue color were lost amid confusion of overcrowded panels of yellow and red. Clean design of new carton omits no essential information, does a better merchandising job.* **11**—*White package for penicillin had poor legibility, no character, soiled easily. New design in two shades of blue on white has distinctive trade symbol, plays up product identification on a white band.* **12**—*Redesigned carton for Heileman's beer adopts a modern approach and introduces a character with high remembrance value. Note improved legibility of new white-on-black top panels.*

is able to integrate its efforts closely with actual carton production, at the same time exercising creative skill in such details as the selection and spacing of type.

Another section of the laboratory, designed primarily for sales training work, is equipped with a number of charts and other visual material illustrating principles of package design, proper use of colors, types of boxes, samples of paper board and other data studied by package sales representatives. Tables in this room are made so that they can be moved together to form a single large conference table or can be tucked beneath display shelves lining the wall, clearing the entire space for chairs when a lecture is to be held.

The packaging fundamentals which are highlighted in the exhibition gallery and whose proper application is the object of constant investigation in the research laboratory find concrete expression in the cartons designed or redesigned by the Container Corp. design staff. Examples of some of the packages handled by the design laboratory are illustrated on the accompanying pages, with a brief resumé of the special problems encountered in each case and the nature of the solution.

As will be noted from these examples, a lack of definite identification is often one of the main weaknesses encountered in a package which is to be redesigned. Packages on which the brand name is obscured by too much copy or misdirected design can be greatly improved in merchandising appeal by reducing the conflicting elements and giving the brand name increased emphasis. Lack of unity among the various design elements or poor selection and spacing of type may call for a new treatment in which greater thought is given to integration of the entire package as a sales-stimulating unit.

Careful consideration is given to the best means of obtaining clear-cut illustrations that will print without difficulty on the type of boxboard which has been specified for the job.

An extensive packaging program worked out by the laboratory for one customer involved a number of typical problems encountered in dealing with a large group of related packages. In this instance, the company had been packing a number of products in containers of various sizes and shapes. Although all of the packages bore printed designs, there was no family resemblance.

Primarily, the problem consisted of developing a family design which could be applied to any carton, regardless of its shape, size or construction, and which would immediately identify the product as one of the line manufactured by the company. There was a total of 35 boxes in the line.

The design of a suitable trade name required a line drawing which would be easy to reproduce in one color, in reverse, or half in ink and half in reverse. After development of a workable over-all design, it was considered desirable to devise a special type which would harmonize with it and be adaptable to any size or shape of carton.

In the case of this group of packages, all three of these problems were worked out almost simultaneously in order to achieve the unity and harmony required for a family group of packages.

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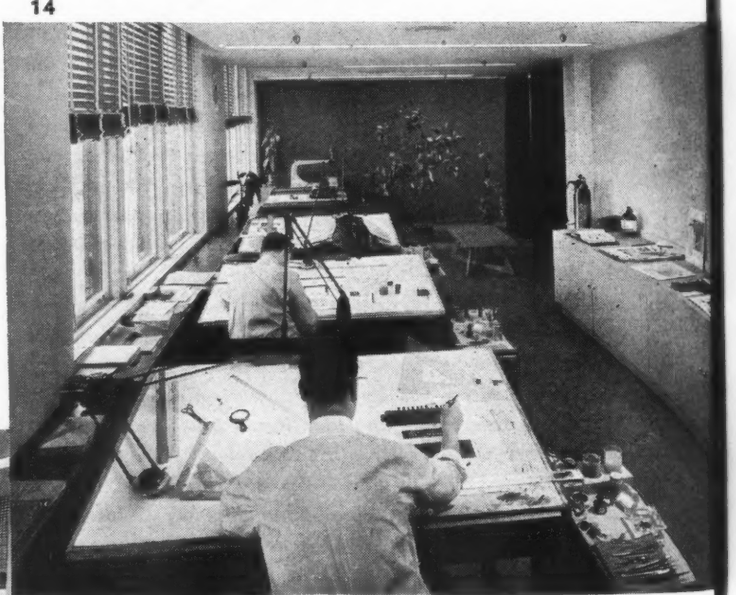

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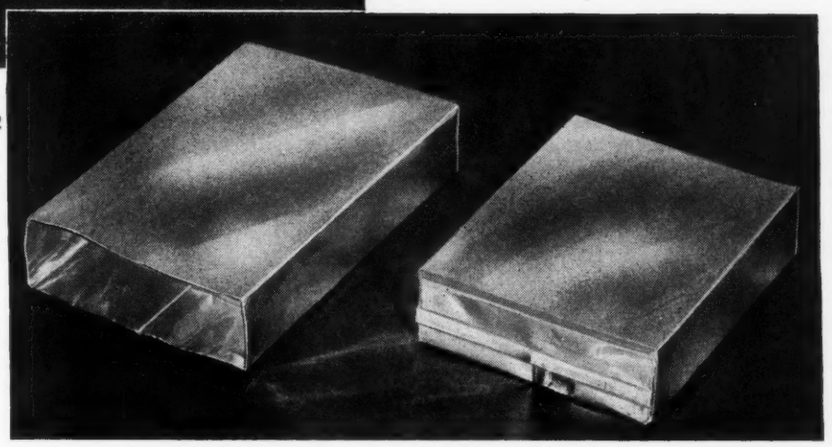
13—*In the art department basic design and color patterns for package panels are determined.* **14**—*In black-and-white drawing department final art work is translated into terms of actual printing.*

1—*Full rotogravure printing may be done directly on foil with both transparent and opaque lacquer inks as illustrated by this advance hand-made sample. For maximum eye appeal, part of design may be printed in opaque inks with natural-color reproduction of fruits or vegetables.*



2—*Package is made from a single sheet of heavy aluminum foil by crimp-folding the sides and ends, eliminating need for carton, liner or wrap. Package is formed on special machinery with one end open for filling.*

Foil for freezers . . . a single-unit container

One of the leading frozen food packers will use an aluminum foil package for a large part of their operation during the coming season as the result of experimental work just completed in cooperation with Reynolds Metals Co.

The new package, made from a single sheet of heavy aluminum foil by crimp-folding the sides and ends, requires only one basic material, thereby eliminating the need for carton, wrap or liner.

Extensive tests run in the supplier's laboratory and in those of the packer indicate that: (1) use of the new container reduces freezing time 30% to 50% in comparison with conventional three-unit packages; (2) the amount of time saved depends both on the type of product and the method of freezing. Best results were obtained when multiple contact or blast air freezing was employed.

The makers of the package claim that this acceleration of freezing, which is so important from the standpoint of product quality, color and nutrition, is due to the fact that the new package consists of nothing but aluminum foil, which is a good conducting material and does not create an insulating barrier around the product.

When formed the foil package looks like a conventional-shaped frozen food package, although the material itself is flexible. Thickness of foil used may range from .0035 to .005, according to specific requirements of the application.

The aluminum foil, already printed, will be delivered to the user's plant in rolls said to require a minimum of storage space. It will be fed into special automatic equipment which cuts it into the required length, forms the container, closes the sides and one end, but leaves one end open. By conveyor, the containers move to a conventional-type filling machine, then to a third stage where they are automatically closed.

The container is said to be essentially watertight when formed with the crimp closures. However, to provide an absolute safety factor, it is planned to employ a caulking compound on packages to be used for liquid products. Microcrystalline wax has been found to be a satisfactory material in most instances. During the forming and closing operation, the proper application of heat causes the wax to flow into minute crevices of the seam. There can be no wax whatever either on the outside or inside of the package, but only between the two layers of aluminum foil forming the crimped

fold. Thus the caulking compound cannot affect the appearance of the package, nor can it come into contact with the product. Caulking will not require a separate operation or additional equipment, since this function has been incorporated into the forming and closing process.

The equipment for forming and closing the package has been specially designed. It is said to be simple in construction and operation and its cost will be in line with conventional equipment of this type. First units are being built to handle approximately 100 containers per minute. The equipment will be flexible to permit ready adjustment to the different sizes of consumer packages used in the frozen food industry.

Because only one basic material is used, the foil package should reduce labor and machine operations. It is said that its cost will be comparable to that of existing types of packages.

The foil is said to be fast-freezing, non-absorbent and lightproof—properties that should improve quality, flavor and color of the foods it protects.

Possible re-heating of food in the unopened container, the experimenters say, will prevent cooking odors and retain maximum flavor and vitamin content of the food. These packages can be placed in running water to thaw. The foil package may be opened in several ways, but most quickly by running a knife along a cutting line which will be printed across the top of the package along the width and extend down the sides to the bottom (see Fig. 4). The package is easily disposable by flattening the foil.

From the standpoint of appearance, the foil pack offers an interesting new merchandising tool in the frozen food field because of the brilliance of the material and the colorful printing effects that may be achieved.

The packages may be printed in full rotogravure color by special process with both transparent and opaque lacquer inks. To bring out the full visual appeal of the container it is advisable to have part of the design printed in the so-called transparent inks, which are as rich and vivid as the opaque but which permit the metallic luster of the aluminum to shine through. For contrast, the rest of the design may be printed in opaque inks with a natural-color reproduction of the product. These have the same effect as color printing on other media. Printing, of course, is done directly on the foil surface.

This foil pack for frozen foods has been subjected to extensive tests by the leading packer using it to determine its ability to withstand normal punishment in handling both in shipment and in the retail outlet. It has also been market tested for consumer reaction. In every instance, it is said, it was chosen by a majority of shoppers from among other well-produced packages with the same contents and trademark.

Because the water-vapor transmission rate of the foil used in the frozen food package is zero, it is said that this package reduces freezer burn to a minimum. The retention of quality in frozen foods is, to a large extent, dependent upon protection against moisture-vapor losses and contact with air during low-temperature storage. The frozen food industry has recognized this fact and consequently there has been a steady improvement in containers used for frozen fruits and vegetables and wrapping materials for meats and poultry.

The tendency toward loss of moisture by frozen products is in accordance with the natural law of equalization of humidity. The free air space surrounding the frozen food within a package approaches a 100% relative humidity because of the presence of ice crystals in the product. On the other hand, relative

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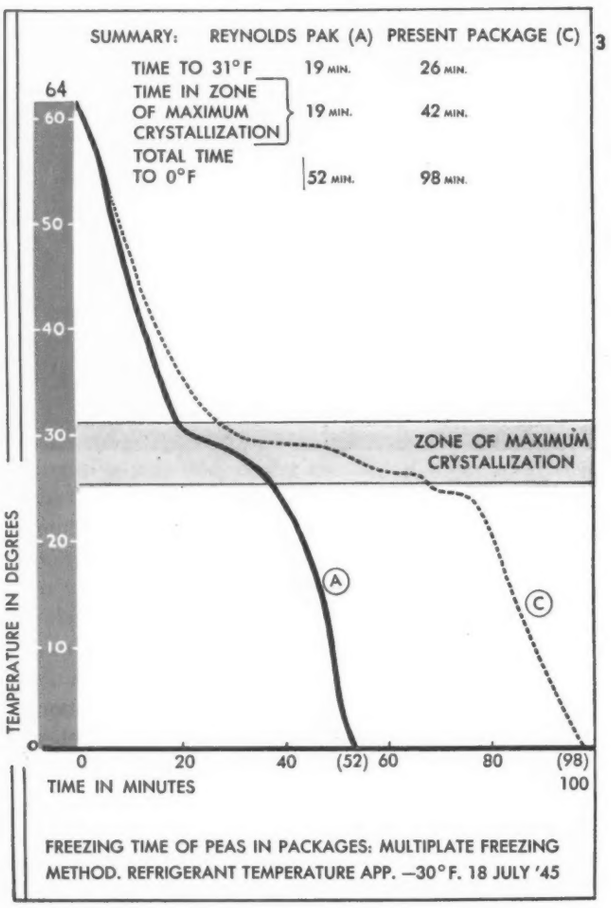

4—The aluminum foil package is opened quickly by running a knife along the cutting line printed across the top. Package can be placed in running water to thaw the product. It can easily be disposed of simply by flattening.

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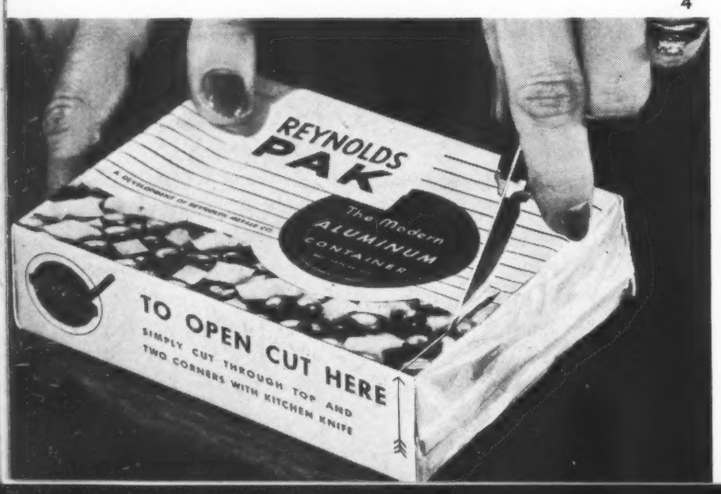


humidity of the low-temperature storage space is usually far below the saturation point. This difference in relative humidity establishes a difference in vapor pressure between the inside and outside of the package and causes the movement of water-vapor from within a non-hermetically sealed package to the atmosphere that results in desiccation of the product commonly known as freezer burn. Thus a packaging material that provides a barrier against this movement of water vapor is essential.

Pure aluminum foil will be found satisfactory for nearly all purposes in frozen food application, according to Reynolds, but the company states that the nature of certain food products with a relatively high salt or acid content may possibly require treating of the inner surfaces of the container with a protective coating. If this should be necessary, the foil may be pre-coated at very slight additional cost by a special process already developed. In most cases a very thin coating of the vinyl type should prove satisfactory. The company further states, however, that in all the tests made with many different types of products, not a single application has so far been encountered where the necessity for such a coating was indicated.

The leading frozen food processor and Reynolds are looking forward to the coming season's packing operations to test further both the package and the special packaging equipment developed for this purpose. In this way, they say, it will be possible to deal thoroughly with any new problems that may arise, although experiments have already been so comprehensive that no such problems are now foreseen.

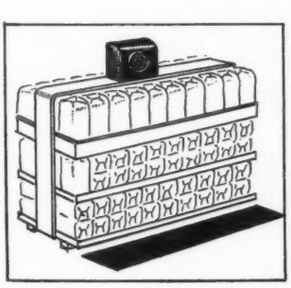
It is expected that final perfecting of the new equipment will be accomplished under actual plant conditions and it should therefore not be generally available until 1947. Meanwhile, Reynolds Metals Co. is prepared to make special tests in other packing plants, employing its own trained personnel and using hand-formed containers, identical in every respect with the machine-made product. This will enable individual packers to test the container and its application to their own products.

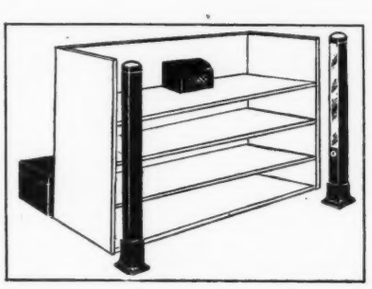
In addition to its uses in the frozen-food industry for packing fruit juices, vegetables, seafoods, pre-cooked foods, etc., this new foil pack will be adaptable in various sizes to almost any product which requires a liquid-tight, airtight, or lightproof container. It might be applied to some dehydrated foods, cereals or photographic materials. Some of these applications outside the frozen-food field are already beyond the development stage, but particulars cannot yet be released.

It talks when you reach for a loaf of bread

When a customer steps up to this bread rack, it delivers a talking sales message right at the point of sale. As she approaches, the shopper crosses a beam which sets the mechanism into action. The device, called an electronic merchandiser, is operated on the electric-eye principle which starts and stops the messages. Pilot tests are being made in Pottstown, Pa. The merchandiser may be built in the rack or may be a portable model placed on any rack as shown below with mechanism concealed in back. It will be a traveling unit, six weeks to a store. Idea is to attract customers to certain packaged products, get them in the habit of buying a specified brand that they will continue buying after the merchandiser has been moved elsewhere.

CREDIT: *Display rack by Electronic Advertising, Inc., New York City.*





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1—General view of package forming, filling and closing installation at Geo. Weston Biscuit Co., Salamanca, N. Y., showing (left) carton feeder, liner, bottom maker; right center, vibratory feed weighing and filling units; far right, combination roll closer, top tucker and sealer. **2**—*Close-up of completed package for Weston's Crack-ettes. Design of front panel is such that continuous pattern of crackers is formed in side-by-side shelf arrangement. Notch and tuck-in flap at the top facilitate opening of the glued paperboard carton, which has a protective glassine liner.*

Cracker operation

. . . high-speed forming, filling and sealing

Completely automatic production and packaging of cocktail type crackers, from the time the dough is mixed until the finished products are delivered into the cartons and sealed, has been achieved at the Salamanca, N. Y., plant of the George Weston Biscuit Co., through the installation of high-speed carton forming, filling and sealing equipment precisely synchronized with the actual baking operations.

This installation, which utilizes a battery of modern automatic equipment for forming the cartons, weighing and filling the product and sealing the filled cartons, enables the plant to maintain an output of from 60 to 80 1-lb. packages of "Crack-ettes" per minute. Completed several months ago, it swung into official production around February 1, after a "shakedown" period during which the timing of the various operations was gradually adjusted to provide a smooth progression of the crackers from oven to package. Although current production is somewhat restricted by curtailed supplies of sugar and shortening, it is hoped to place the installation on two-shift operation in the near future.

Officials of the Weston company are enthusiastic about the equipment, which, they believe, gives them the last word in automatic production and packaging of this type of cracker. Much of the credit for the success of the installation goes to Heaton Goff, general manager of the Salamanca plant, a veteran of many years in the food packaging field.

Crack-ettes are a new product with the company,

being made solely at the Salamanca plant for distribution through the sales organizations of the various Weston units. The equipment used in packaging them also will handle satisfactorily other types of bakery products, but the popularity of the new cracker has proved so great that the line will probably be kept on this item exclusively as long as merchandising considerations so require.

Completion of the Crack-ette installation enables the company to maintain a rapid production schedule on this product with a minimum of labor. Following the baking process, the crackers are carried on a cooling conveyor and brought by an overhead belt system directly to the automatic weighing and filling machines, which direct them into lined cartons. The entire layout is designed to insure uninterrupted carton forming, product weighing, filling and package sealing. The accompanying photographs provide an overall view of the complete line, as well as close-ups of the individual pieces of equipment used.

As far as the packaging phase of the operation is concerned, the story begins with the carton feeder, liner and bottom maker, which produces a bag within the carton and seals the side seam and bottom of the carton under continuous motion at a speed up to 80 packages per minute. This unit takes the waxed glassine lining paper from the roll and forms it around a mandrel, heat-sealing the side longitudinal seams and roll-closing as well as heat-sealing the bottom of the liner.

The same unit takes the carton blank from a reservoir, forms it around the mandrel carrying the liner, adheres the latter to the inside front and back panels of the carton, glues the side seam and the bottom flaps, code dates the package and strips it from the form to a conveyor. The lined carton, with top flaps open, then passes via conveyor to the four automatic weighing and filling machines. Special features of these units enable them to handle, with minor modifications, a wide range of dry products—noodles, potato chips or biscuits.

The cooled crackers, brought into position behind the weighing and filling machines by overhead conveyor belt, are chuted into the rear supply hoppers of the machines and elevated on the rear inclined conveyors. Of composition material with wooden cleats, the conveyors are equipped with self-cleaning type pulleys and afford easy accessibility for servicing and cleaning. Carried to the top of the conveyors, the crackers fall on a control valve which, when loaded, operates a mercury switch and stops the movement of the conveyor until completion of the weighing and filling cycle.

Crackers drop onto feed trays actuated by coils, which produce a vibratory motion and cause them to creep forward, where they fall into the feed buckets. Each of the four weighing and filling units has two

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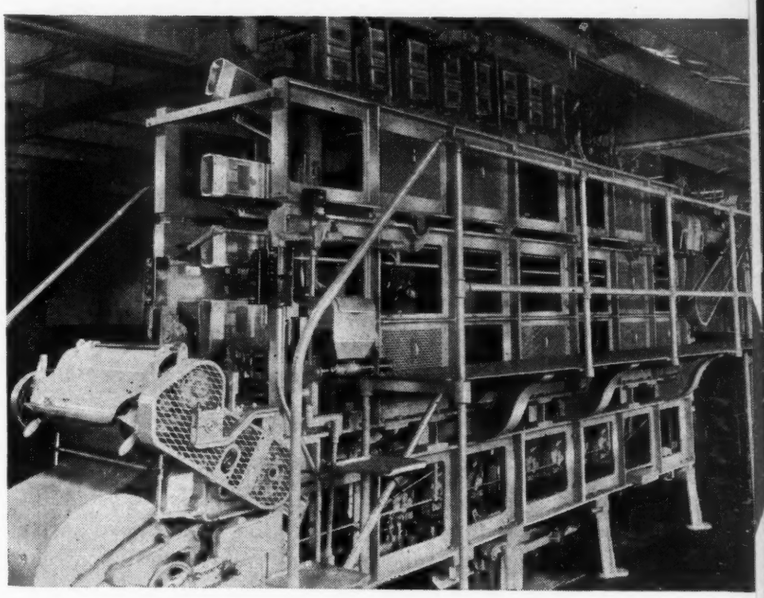

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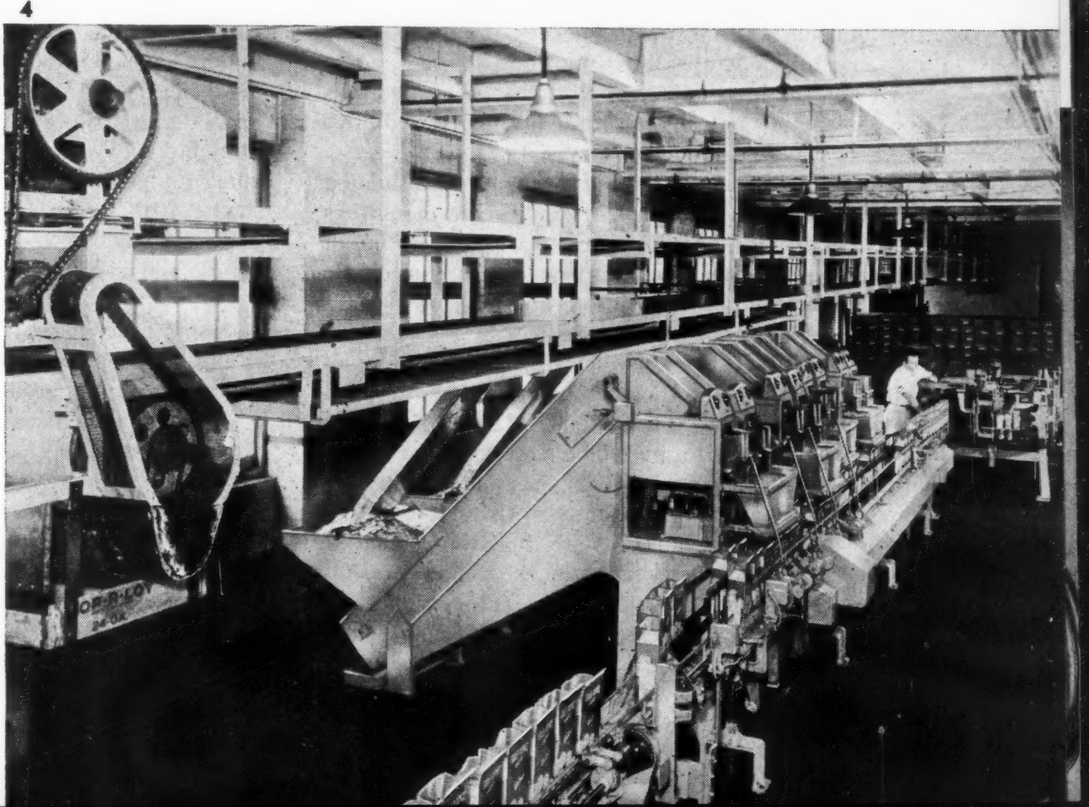
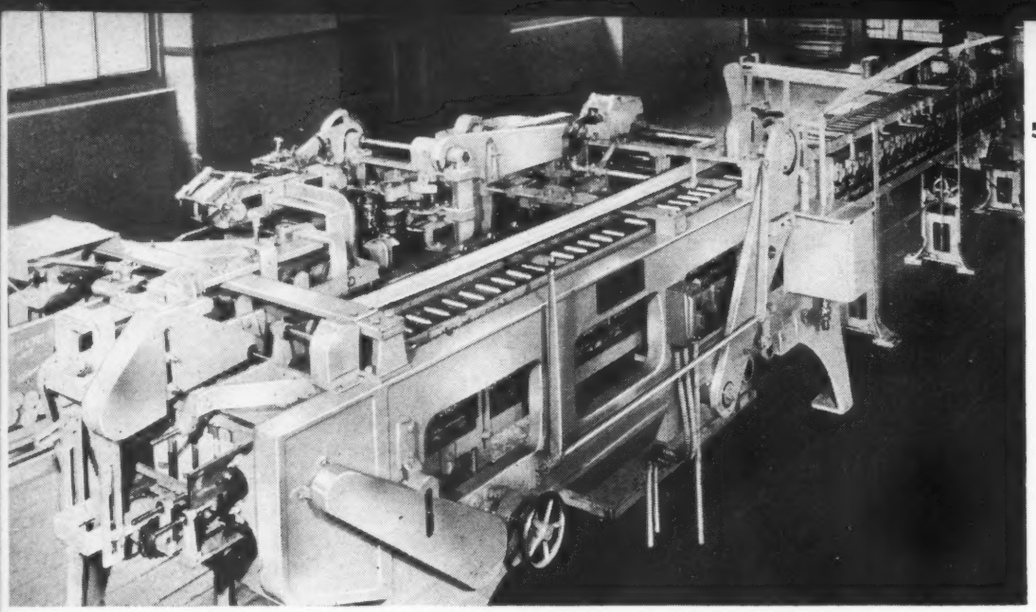


3—Close-up of carton feeder, liner and bottom maker. Note mandrels on which inner liner and carton are formed. Carton blanks are in reservoir, far right. ***4****—View of weighing and filling machines, showing how crackers are fed into hoppers from overhead conveyor line moving from ovens. Movement is from left to right. Open cartons form in two lines as they enter machine and are positioned under eight filling heads. After filling, packages move into sealing machine in right background.*



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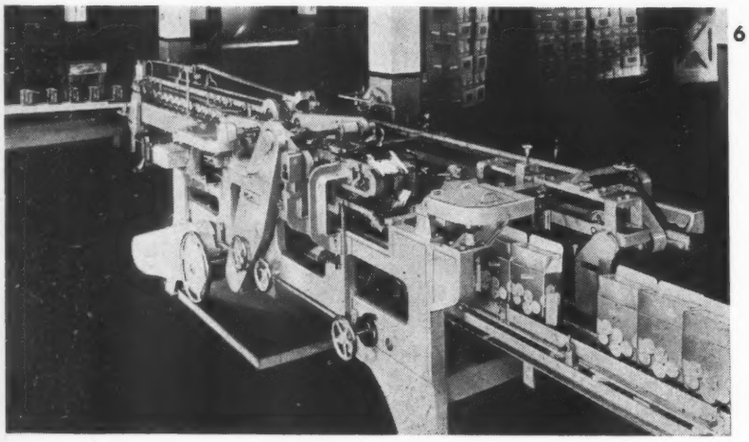

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5—Close-up of combination roll closer, top tucker and sealer, from the intake end. 6—Another view of final sealing machine, also from intake end, but on opposite side of machine from Fig. 5. Output is from 60 to 80 per minute.

parallel trays—one for bulk feeding and the other for dribble feeding. The bulk tray rapidly transfers 14 oz. of the required 1-lb. fill into the weigh bucket, after which a mercury tube switch cuts off the flow of current to this tray. The dribble tray then completes the last 2 oz. of fill, making a fine adjustment possible. When the total fill is in the weigh buckets, the dribble tray mercury tube operates, arresting its vibratory movement and halting the flow of crackers. So accurate is the system of control that total fill varies from two crackers plus to one cracker minus.

The base supporting the tray mechanism is insulated in the frame by means of springs and rubber mountings so that the vibration will not disturb the operation of the adjustable scale assembly beneath it. Amplitude of tray vibration can be adjusted by means of rheostat controls on the front of each machine.

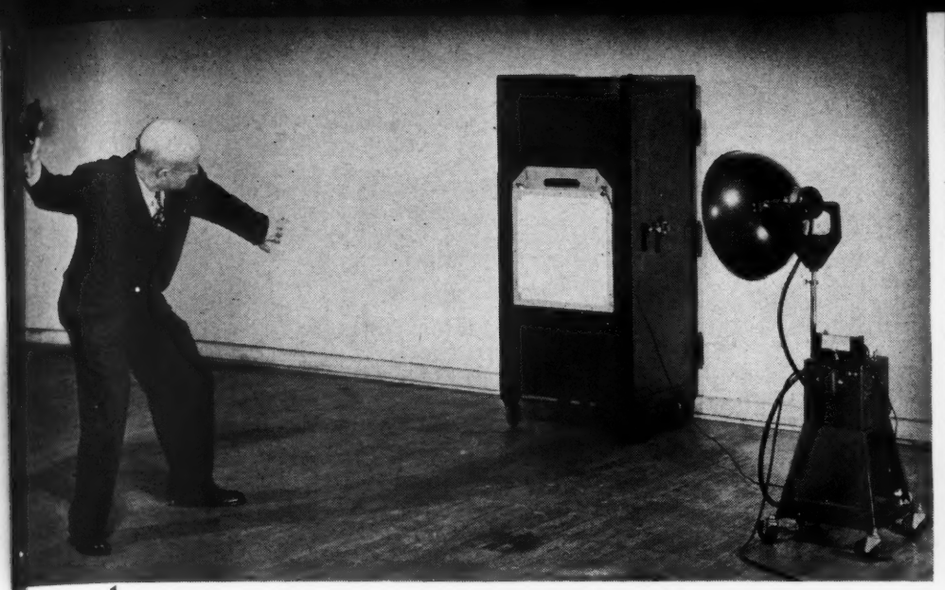
As soon as the eight weigh buckets (two on each machine) have the correct load, the crackers are dropped simultaneously into the cartons. As shown in an accompanying illustration, the single conveyor which brings the cartons from the forming machine divides into two lines at the filling units, with each conveyor serving only two machines. With this arrangement, if one filler happens to lag slightly on the weighing operation, only four weigh buckets instead of eight are temporarily delayed. The weighing and filling machines are placed in alignment. Provision is made for the double conveyor arrangement by extending the mounting of the delivery chutes on the first two machines in the line. Conveyors merge into a single line again after the filling operation.

Cartons to be filled are held in position beneath the weighing buckets by a package control until the crackers are discharged into them. During the filling process, a liner spreader mechanism operates to hold the carton open, insuring unhampered flow of the product into the cartons. A "no carton—no fill" device actuated by a lever on the conveyor and incorporating a mercury tube switch, stops the operation of the weighing and filling machines when no cartons are moving along the line.

The filled cartons progress to a roll-closure top-tucking machine, which forms three rolls in the liner, tucks the paper into position, applies glue to the tongue of the tuck flap and to the two short flaps, and introduces the carton into a pressure drier, where the flaps are held in position until the glue is sealed. This machine is capable of handling from 65 to 100 cartons per minute, depending on the type, size and weight of package being run. It occupies a floor space 6 by 13 ft. and is $4\frac{1}{2}$ ft. in height. The unit requires no operator, but only intermittent attention to replenish the glue supply.

The attractive Crack-ettes package is lithographed in four colors on 22-point white patent-coated newsboard, and varnished. Principal background color of the package is bright red, against which the reproductions of the crackers, in natural color, and the horizontal blue band at the bottom of the carton stand out sharply, with the product name prominently featured in yellow letters across the band. One of the side panels lists three recipes in which the crackers may be used and also invites the purchaser to send 10 cents for a complete recipe booklet, while the other panel is devoted to descriptive information about the product. Both end panels are printed on a buff background.

The package, designed to hold 1 lb. of the Crack-ettes, measures $6\frac{3}{8}$ by $9\frac{1}{2}$ (*Continued on page 192*)



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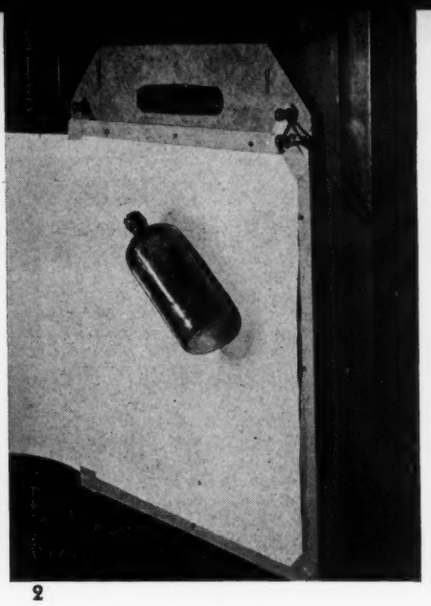

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1—Plastic-coated bottle is hurled against target made of two thin sheets of brass covered with white paper and attached to steel safe. 2—Bottle takes own picture by stroboscopic photography. Impact pushes brass sheets together making an electrical contact which sets off the flash of $^{1}/_{10,000}$ second duration.

Let it break! . . . coating saves contents of shattered bottles

A new method of applying a plastic outer coating to ordinary glass bottles may be the answer to the problem of preventing leakage of dangerous or corrosive or highly valued products from containers broken in shipment or handling. The coating is so tough that it will remain intact and preserve the contents even though the glass bottle is broken to bits.

The coated bottles were developed during the war, and are expected to find wide acceptance in chemical laboratories and plants for both shipment and storage of dangerous liquids. They may also find application for the protection of costly essences used in the pharmaceutical and cosmetic industries. Several chemical manufacturers already are using the bottles.

At present, one-gallon bottles are being coated. They are simply dipped in a special solution of nitrocellulose plastic. When the excess plastic has dripped off, an even, conforming nitrocellulose film 10 to 20 thousandths of an inch thick drys on the bottle. In effect, a second bottle has been molded over the first.

A spectacular demonstration, illustrated in the accompanying photos, shows the strength of the coating. A coated bottle is thrown with great force against the side of a heavy steel office safe. Although the glass inside is shattered by the force of the impact, the plastic "bottle" remains undamaged, and not a drop of the sulphuric acid originally contained by the glass is lost.

While not all acids would be held indefinitely by the nitrocellulose coating, due to chemical action, most of them would be held long enough to permit discovery of the broken bottle and transfer of the contents.

The coating has other advantages. Normally transparent, it can be colored with dyes to provide quick identification of contents. The coating protects the label on the bottle, which otherwise may become illegible through handling and the bottles can be washed without affecting the qualities of the coating.

CREDITS: *Bottles coated by Detroit Macoid Corp., Detroit, Mich. Nitrocellulose by Hercules Powder Co., Wilmington, Del.*

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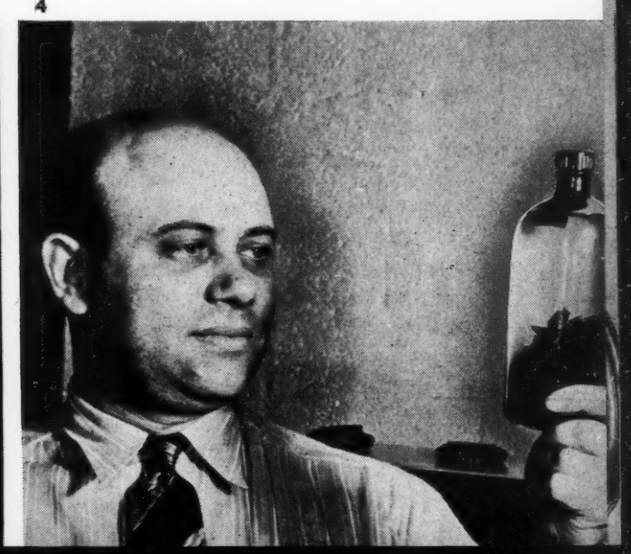

3—This is what happens when an ordinary uncoated bottle is hurled against safe in the same way. 4—Examining coated bottle after the test. Sulphuric acid—and broken glass—are contained by the secondary plastic "bottle."

1—New Ultra-Vac coffee jar with Flexeal closure, showing labels of the five brands first to introduce it.

A new glass package for coffee

. . . new jar, new resealing closure, new vacuumizing machine

Hailed as a significant forward step in glass packaging, the new Ultra-Vac coffee jar is making its bow to the public this month carrying the labels of five leading coffee packers.

In progress in the research laboratories of the Owens-Illinois Glass Co. for more than two years, the development includes not only (1) a glass jar of new shape and lighter weight, but also (2) a new side-seal hermetic closure with special protection and convenience features and (3) a new vacuumizing-sealing machine with a speed of 120 jars a minute—twice the best speed attainable with the old screw-cap jar.

The new cap, trade-named Flexeal, is of the pry-off type and is said to provide the housewife with a pressure-tight, non-breathing reseal. The cap is so flexible that it permits an effective reseal even if distorted by occasional careless removal.

The common kitchen tablespoon provided the clue to the type of package that was to be built. Research showed that the average housewife would use the bowl of a tablespoon—which she would also use to measure out the coffee—to pry off this type of lid.

This consideration influenced the contour of the new jar. It was decided to lower the neck—since threads were not required—and broaden the shoulder. This design gives better leverage to the short fulcrum of the tablespoon bowl and puts the leverage where the housewife can use it most effectively.

The opening of the new jar is made wider than that of the screw-cap jar, to facilitate accurate measurement and removal of coffee for brewing.

From the standpoint of weight, the new container marks one more step in the steady lightening of the standard coffee jar, which now weighs less than half what it did 10 years ago. The Ultra-Vac jar shows an average weight reduction of $1\frac{1}{2}$ ounces from the screw-cap jar which preceded it. Weight reduction is important to the coffee roaster, who pays the freight from his plant to destination.

Reduced height of the jar gives approximately 10% more warehouse space and permits the new container to be stacked two high on retail shelves of average 12-in. clearance.

The manufacturers declare that in this package they have reached "the ultimate in a glass vacuum package for coffee." Their claims for the package are based on exhaustive testing. They state that not only will the container give the roaster a peak-vacuum package that can be handled efficiently, economically and at high speed through his coffee lines, but it will have merchandising and handling advantages for the retailer, and will bring to the consumer roaster-fresh coffee with the added convenience of easy opening and air-tight reseal to protect the flavor in use.

Background of development

The story behind the development is one of research and planning with the definite goal of finding the best vacuum package for coffee that the glass industry could produce. It was realized at the start that this meant designing a new closure as well as a new container. There then developed the need for a new vacuumizing machine of higher speed and greater efficiency.

With these objectives in mind, it became necessary to compile a list of specifications that the ultimate

vacuum package for glassed coffee should embody.

A meeting was arranged to which were invited some of the largest and most representative coffee roasters in the country. They were asked to set the pattern for the postwar coffee jar, listing those essentials which they wanted. Across the table, these roasters suggested those features which they believed should be incorporated in the coffee jar of tomorrow.

Then another meeting was arranged at which all of the manufacturing know-how of Owens-Illinois' plants was brought together. These production men were told the story of the need for a high-vacuum package and were then asked for their suggestions without having been given any information on the specifications already advanced by the roasters or by Owens-Illinois' packaging research people.

Out of these meetings came the blueprint for the coffee jar, the cap and the new vacuumizing machine. They produced eighteen "must" specifications that had to be embodied in connection with the production of the new package. These were:

1. The new jar invariably must have a positive high-vacuum seal.
2. It must be commercially tamper-proof.
3. It must have a glass finish that lends itself to mechanical precision inspection at the glass manufacturer's plant.
4. There must be a sealing principle that will insure against trapping of coffee dust at the sealing point under high-speed vacuumizing or rapid exhaust of air from the jar.
5. The jar must be full-open throughout the vacuum cycle so as to permit attaining the peak of vacuum.
6. The package cost must be lower than that of other types of vacuum containers for coffee.
7. The new jar must have a wider opening to permit speed of filling and maximum convenience in use.
8. It must be easy to open and reseal.
9. It must have a pressure-tight, non-breathing reseal.
10. The jar must have ideal proportions to provide maximum economy of space in warehouses and on retail store shelves.
11. The machine must have a "no-jar, no-vacuum" feature, so that the absence of a jar at one head will not dilute the vacuum in the other heads of the vacuumizing machine.
12. Similarly, the machine must have a "no-cap, no-vacuum" feature.
13. The machine must have a control device which will prevent it from operating unless vacuum is up to prescribed level.
14. The need for a separate cap-applying machine should be eliminated.
15. Container weight must be reduced.
16. Elaborate electrical control panels and jar-

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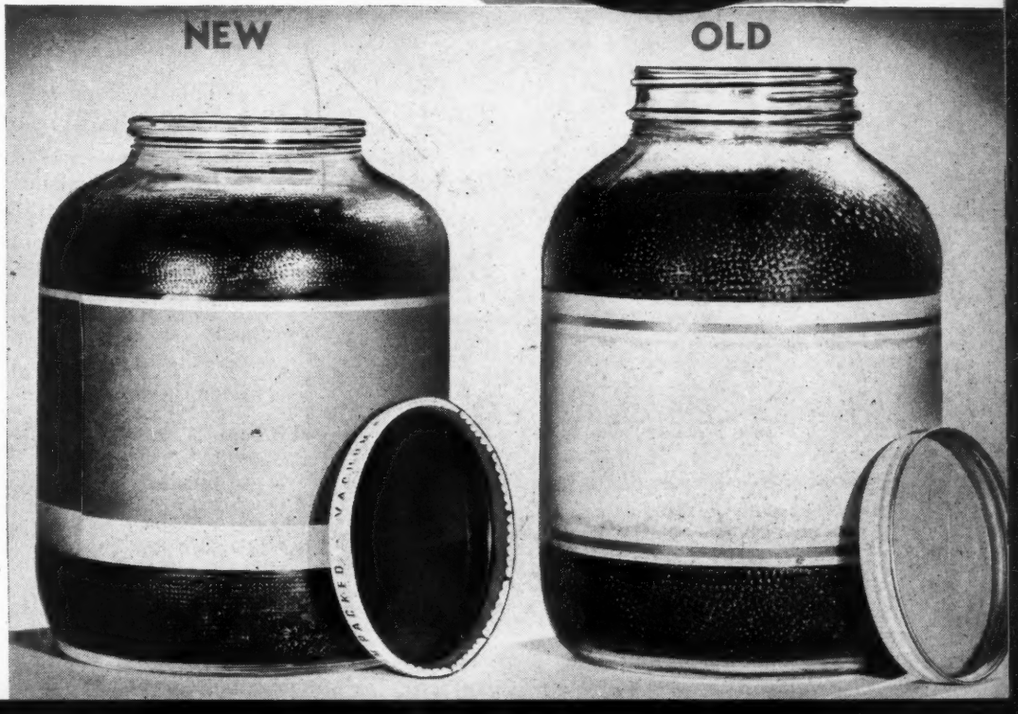

2—Top view of new pry-off resealing closure. Cap itself illustrates methods of opening, resealing and for further instruction paper collar on jar is used during introductory period. **3**—*Contrasting details of new jar and closure (left) with old. Note shorter neck, lower, broader shoulders, which effect weight reduction of 1½ oz. On inside of new closure, side-sealing gasket is held by crimped-under edge of cap.*

4

4—Whole design of jar and cap was built around finding that most women would use bowl of tablespoon to pry off cap. Shoulder gives proper leverage for easy opening.

5

5—Note wider mouth of the jar, making it easier to measure portions of coffee and remove with a tablespoon.

6

6—Slight pressure with palm of hand reseals the cap airtight, preserving maximum freshness and flavor of coffee.

flow switches on the packaging line must be eliminated.

17. Floor-space area required for a complete vacuum-packing line must be reduced.
18. Speed of operation of the vacuumizing machine must be increased.

All of these specifications are now contained in this new coffee package and in the machine that applies the cap and draws the vacuum.

The cap and seal

In order to insure roaster-fresh coffee under vacuum, it was decided to seal the package vertically instead of horizontally. Experience had shown that coffee dust which accumulated on the surface of the sealing ledge reduced vacuum efficiency. This dust was lifted under high-speed vacuumizing or rapid exhaust of air from the jar, and sometimes lodged between the gasket of the closure and the horizontal glass sealing surface.

Examination of the cap shows that a hermetic side seal is obtained with a ring of resilient buna-synthetic rubber which is permanently fixed just inside the lip of the cap simply by turning a narrow edge of the lip under and crimping it tightly. In use, only this gasket material contacts the glass finish; there is no contact between glass and metal at the side-sealing point.

The under surface of the one-piece metal cap is heavily lacquered, but there is no secondary liner as is required with the old screw cap.

On removal the cap is designed to flex and vent any excess pressure before the cap is entirely taken off the glass finish. The closure does not require the addition of an auxiliary sealing band.

The package and equipment not only provide a high sealing efficiency, but also give a higher and more uniform vacuum. In the new vacuumizing machine, described in detail below, the cap is lifted from the jar finish during the vacuum cycle, thus presenting a full-open jar so as not to restrict attaining the last inch of vacuum.

Obviously then, the vacuum pump is the only limiting factor in the degree of vacuum attained.

The vacuumizing-sealing machine

The development of the new 10-head vacuumizing machine is tied in closely with the planning for the jar and closure.

Glass vacuumizing equipment used to date has had a 60-jar per minute speed limit. Since higher speed weighing combinations are being installed, it was felt necessary to design a vacuum machine that would more than match these new speeds. That has been done. The new machine, with its 10 magnetic heads, will operate at 120 jars per minute, an increase of 100% over the present 10-head machine for screw caps.

Since the new jar does not have the screw-type finish, it eliminates the separate automatic screw-cap applicator. This contributes to economy of space in the roaster's plant.

Another saving is effected through the elimination of automatic electrical relays, jar flow and back-up switches for controlling the speeds of the various machines.

The new machine comes equipped with an automatic cap applicator and hopper. The Flexeal cap is readily picked up by the jar from the end of a simplified cap chute.

A new and important feature of the vacuumizing machine provides that when no jar is pushed into the head, or when no cap is on the jar, no vacuum is drawn. On former equipment when a jar missed a head the other nine jars being vacuumized at that time would have low vacuums because of leakage through the open head. On the new equipment, a very simple device not only avoids this condition when one head or more is open but also prevents the pulling up of coffee into the machine in the event a jar should enter the vacuum unit without a cap.

The new machine will not operate unless the vacuum is up to the prescribed level. This is a positive guarantee that each jar has peak vacuum.

The machine was developed in the Package Research Division of Owens-Illinois and will be supplied through that company. The manufacturers state that, even though operating at double the former speed, the new machine will need less service, maintenance and adjustment—indicating fewer times "down" and increased efficiency in operation.

Distribution plans

The Ultra-Vac coffee container is being introduced first in the large Chicago market and will also have early distribution in Ohio, Michigan, Indiana, Wisconsin, Minnesota and parts of Iowa and Missouri.

First plants in which conversion to the new jar has taken place are Hills Bros.; Chase & Sanborn Division of Standard Brands, Inc.; Maxwell House Products Division of General Foods Corp.; California Packing Corp., for its Del Monte brand of coffee, and Reid, Murdoch & Co. for their Monarch brand.

Other roasters will begin using the new jar, according to the manufacturer, as soon as the new vacuumizing machinery can be installed.

CREDITS: *Ultra-Vac jar, Flexeal closure and vacuumizing machine designed and supplied by the Owens-Illinois Glass Co., Toledo, Ohio.*

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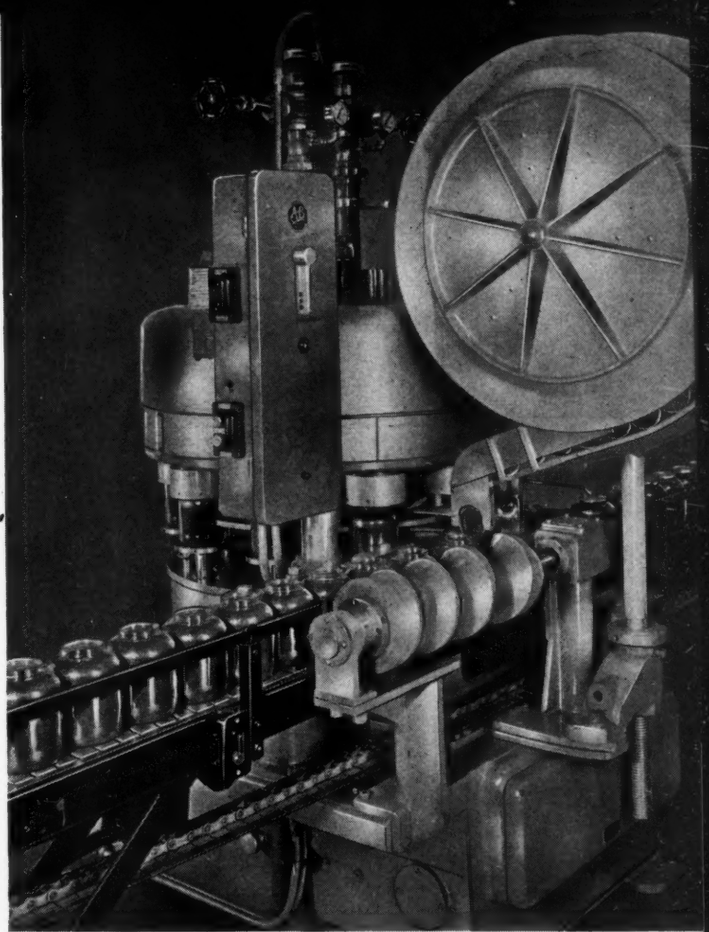

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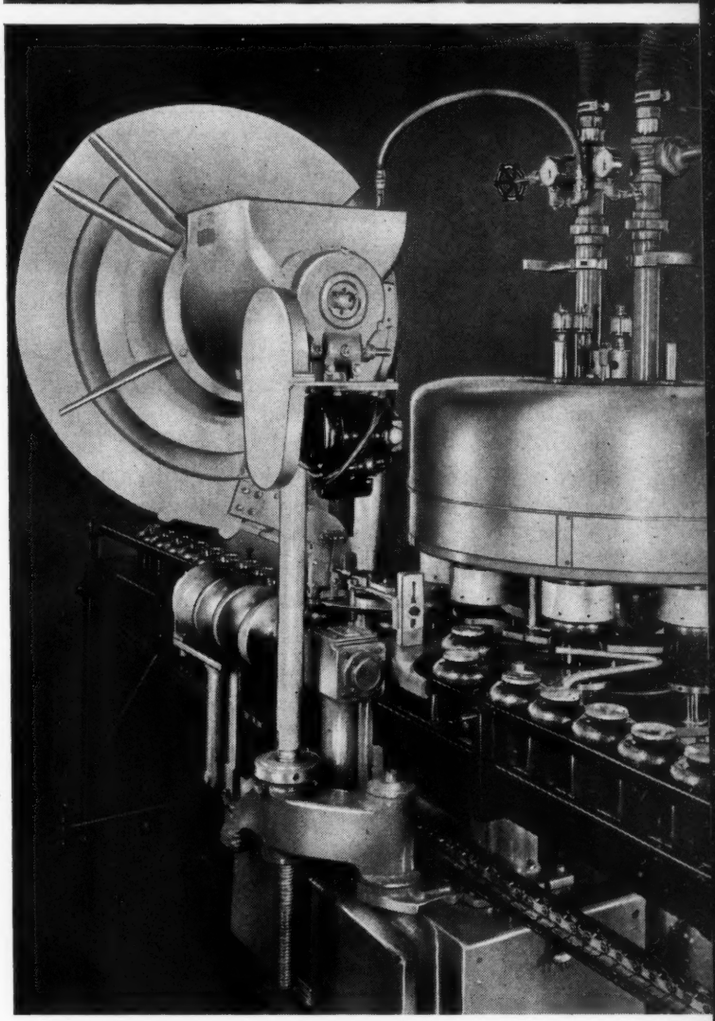
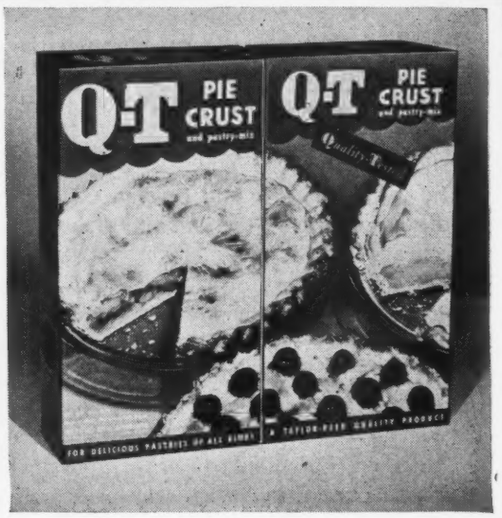


7—*New 10-head rotary vacuumizing machine, specially developed to handle the new jar and cap at speed of 120 jars a minute. Filled coffee jars are timed before entering vacuumizing unit by a driven worm. Closures from automatic hopper (right above) are picked up by the jar just as it enters individual vacuumizing head.* **8**—*View of vacuumizing machine from discharge end. Twice as fast as best pre-war machine, it has special features which insure peak vacuum. All heads shut off automatically if a jar appears without cap, or if no jar appears.*



FIRST HONORS

***1** and **2**—Tied for first place were display containers for Rayve creme shampoo, Ray Fluff shampoo and Rayve creme hair dress, made by American Coating Mills, and Q-T pie-crust package by The Lord Baltimore Press.*

Best folding boxes . . . judged by F.P.B.A. member

Three hundred members of the Folding Paper Box Assn. of America, attending the twelfth annual meeting in Chicago last month, were asked to pick the best boxes of 1946 from among 126 entries submitted by manufacturers in all parts of the country. The results are shown on these pages.

From such a wealth of interesting material, members had a hard time choosing. Taking top honors in the final tabulation were the three hair preparation display boxes made for Raymond Laboratories, Inc., St. Paul, Minn., by American Coating Mills, illustrated above, and the Q-T pie crust mix package produced by The Lord Baltimore Press for the Taylor-Reed Corp., which was shown in a feature article in MODERN PACKAGING last December (p. 93).

Members were asked to judge the packages on the basis of protection, identification, convenience, appeal and economy.

Other boxes selected for awards were the following: Hospitality House bubble bath package, made by Standard Paper Box Corp. for Stephen Riley Co., Los Angeles; Orr Health blanket box, produced by Gard-

***7**—Colorfully printed dispenser-type carton for Freshie citrus flavors was produced by Hummel & Downing Co. **8**—Convenience of use is featured by folding display carton for Globe-Wernicke U-Make-A index tabs, made by Central Carton Co. In use, carton is tilted forward by an easel on the bottom not shown in photo.*

7

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SECONDARY HONORS

3—Box for Hospitality House bubble bath is patented "Frame-Vue" package, made under license by Standard Paper Box Corp. 4—Attractive design and photographic illustration won award for container for Orr Health Blanket, made by Gardner-Richardson Co. 5—Package for Savex soapless sudser, made by Ohio Boxboard Co., features strong illustration and product name and unusual trapezoidal shape. 6—Display package for Crockett spurs, made by Pinkerton Folding Box Co., sets off merchandise, carries wealth of information.

ner-Richardson Co. for Orr Felt & Blanket Co., Piqua, Ohio; container for Savex soapless sudser, made for The Climalene Co., Dayton, Ohio, by Ohio Boxboard Co., and the display package for Crockett spurs made by Pinkerton Folding Box Co. for Crockett Bit & Spur Co., Boulder, Colo. Companies producing the winning packages were awarded certificates of merit.

In addition to the award winners, some of the other boxes which attracted favorable attention are illustrated herewith.

The first general session held by the association in two years, the meeting afforded members an opportunity to study the industry's postwar plans and problems and enabled many to renew trade friendships interrupted by wartime military or government service.

Ermin P. Ruf, Wayne Paper Box & Printing Corp., Fort Wayne, Ind., was re-elected president of F.P.B.A. for another year. New members named to the executive committee included Robert S. Harris, Fort Orange Paper Co., Castleton, N. Y.; W. E. Hardie, Imperial Box Co., Chicago, and A. G. Ballenger, Morris Paper Mills, Chicago. In addition to Mr. Ruf, those re-elected to the executive committee were R. F. Burroughs, Trenton Folding Box Co., Trenton, N. J.; Ralph A. Powers, Robertson Paper Box Co., Montville, Conn., and Joseph P. Thomas, *(Continued on page 192)*

9—Parent carton for Bowl of Roses pipe mixture (left) divides on scored lines to form two display containers for the individual packages. Made by Ace Carton Co. 10—All-over photographic illustration in natural color gives strong sales appeal to box for Regent lawn seed, made by Gardner-Richardson Co. 11—Handy, attractive dispenser cartons for Sentinel camphor ice and Cro-Pax corn remover are made by Great Lakes Box Co.

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New labels for Roma . . . linked to the old

The wine industry is founded on tradition. Americans, not traditionally wine drinkers, have been made wine conscious by the promotion programs of leading vintners, who have capitalized on the romance of fine vintages. Packaging has been an important part of the promotion. The idea of quality has been expressed by the traditional character of the labels and the traditional shapes and colors of the bottles.

Modern American wines are selected, however, in modern package shops. Therefore, labels must not only retain traditional character, but must meet the demands of modern merchandising. Wartime restriction on private mold bottles complicates the situation. All individuality must be expressed by labels, since glass permitted has been restricted to 10 specified containers. Roma Wine Co., one of the largest and most package-conscious wineries, has been foremost in adapting the label to meet this demand for individuality despite restrictions on glass. Recently this company employed one of the country's leading industrial designers to re-do all of the Roma labels. Traditional details are retained; package identity is strengthened and there's individuality despite stock glass.

First to reach the market are new labels for the company's sparkling wines, Estate table wines and Roma's vermouth, dry and sweet. The labeling program comprises a dressing-up job for all containers used.

Most noticeable element of the new designs is the strengthening of the company's name, Roma. This appears at the top of every label. In keeping with the name, Roma, it was a natural to use a modified Roman lettering. Thus the poster effect of the trade name is as expressive of Roma as the lettering carved in stone on the façades of classical buildings in the Roman Forum. On the Estate wines the Roma appears in reverse white printing on black. On the labels for the sparkling wines it appears either in white or black depending on which is most effective for the over-all color scheme.

Simplicity has been the keynote of the design throughout, yet with all the traditional elements of graceful scrolls and decoration retained. For the table wine group, the second most important element after the trade name, Roma, is the brand name, Estate, which gets the center position in script printed diagonally across the white panel in red. The variety of wines—sauterne, rhine, burgundy, etc.— is printed below the word, Estate—preceded by the word, California, in each case so there is no mistaking the geographic origin of the product. At the upper left hand corner of each label is the company's trade symbol—an escutcheon in gold, surmounted by a crown and carrying the identifying letter R for Roma—an R that is personified to resemble the figure of a man carrying a bottle of wine. The R trademark is also printed, in in some cases, on the cellulose sealing band.

The luxury of the sparkling wines is expressed by simplicity and richness of color and by a delicacy of the decorative treatment. The trademark escutcheon has

1—Sample of label for sparkling burgundy illustrates essential principles of Roma redesigns. Traditions of old wine labels are retained, but the high visibility treatment of trade name is in keeping with modern merchandising ideas—strong family tie-up with the large Roma lettering and trade symbol.

2—*Examples of three redesigned Roma groups. Other Roma products with new labels will be on market soon. How Roma trade name has been improved is indicated by comparison with old label on dry vermouth at top, left.*

been incorporated in a scroll-like grape design printed in gold that forms the central theme of the label. The word, Estate, appears on each of the labels at the upper left-hand portion of the panel. Background for the champagne label is traditionally white. The famous red of Burgundy is, of course, the background color for the label on the sparkling variety by that name. A pale yellow is used for the background color of the sparkling moscato spumante. Appropriate neck labels incorporating the trademark and the grape motif hold the foil in place over the tops of the bottles.

All the essential elements of traditional design have been maintained on the vermouth labels. The photo above, for comparison, illustrates the old label for the dry vermouth and a new one for the sweet. Both now carry the large lettering of Roma at the top. However the traditional green printing has been kept for the dry vermouth. The sweet vermouth label, with red and gold predominating, is also in keeping with tradition, but has gone through a dressing-up treatment.

CREDIT: *Design program, Raymond Loewy & Associates, New York. Labels, Lehman Printing Co., San Francisco.*

Quick "pick-up" tissue box

Personal Products Corp., Milltown, N. J., has developed a new single-fold cleansing tissue with an unusual dispensing feature—the first packaging development in years in the tissue industry, the company claims. Known as "Yes" tissues, the new product is said to provide quick pick-up from the container producing a tissue in a flat, ready-to-use condition.

The folding carton for "Yes" is 7 in. wide by 10 in. long by 3 in. deep, and the perforated opening on the top of the box is 5 in. by $6\frac{1}{4}$ in. The shallow depth of the container, combined with the large opening, permits removal of the tissues without tearing or mussing and eliminates the need to "dig down" when the tissue supply runs low. The over-all exterior of the box is colored a new soft shade of blue known as "Yes" blue. Product name and display lettering appear on all sides in black and white. The bottom of the carton, picturing an open package of the tissues, makes the container adaptable for display purposes.

CREDIT: *The New Haven Pulp and Board Co., New Haven, Conn.*

DESIGN HISTORIES

A bar for beauty

A purse-size, palm-fitting, spill-proof compact, featuring five cosmetics, is the latest development by the Constance Bennett Cosmetic Co. This unique package, designed by Miss Bennett herself and appropriately titled the Beauty Bar compact, holds individual containers for face powder with puff and sifter, foundation cream, rouge, eye shadow and the new "Flipstick" lipstick—all in matching shades. Compression molded from urea, the two sections of the case are joined by a metal pin. The base of the compact is provided with indentations into which each of the individual urea-molded containers is locked. The mirror is fastened to the top section of the case by a solid coating of plastic glue compounded especially to adhere to urea. A silk-screen flower design appears on the cover of the compact and each of the inside containers has the name of the cosmetic silk-screened on its cover.

The Flipstick lipstick, made of urea and tipped with metal at both ends, is opened simply by the thumb of one hand. There is no cover to remove; the top flips down the side of the stick to operate a spring within the tube which pushes the lipstick out of the case ready for use. The Beauty Bar is made in burgundy, ivory, ebony, coral, and combinations of these shades.

CREDIT: *Tech-Art Plastics Co., Long Island City, N. Y.*

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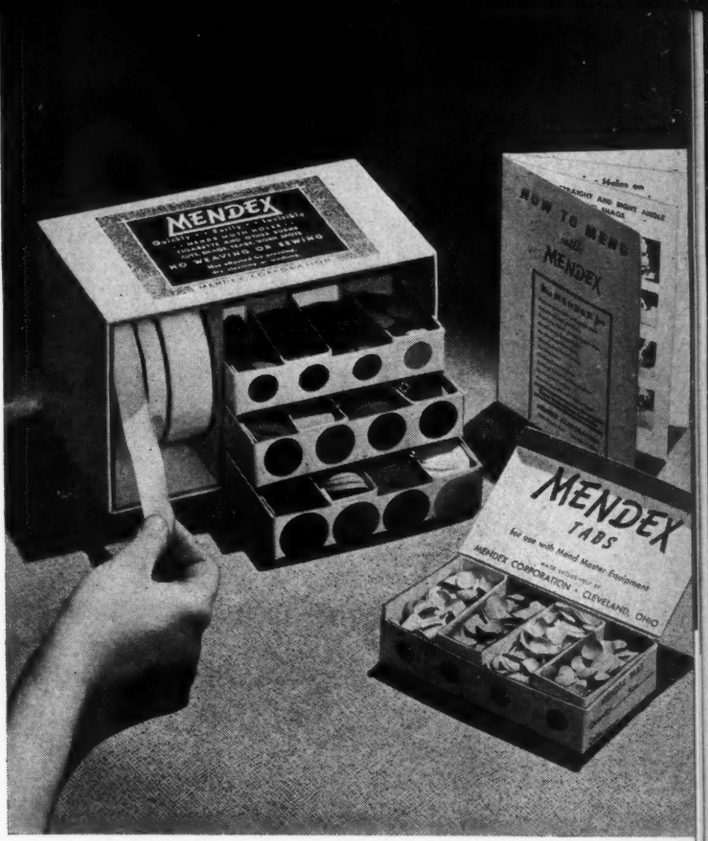
Kit for 5,000 repairs

A convenient re-use container designed after years of research by the Mendex Corp., Cleveland, Ohio, holds the firm's line of materials for repairing tears, rips and holes in fabrics. The Mendex Senior Repair Kit, for institutional use, keeps the various items needed for making approximately 5,000 repairs in neat order, free from dust and dirt and always ready for instant use.

Fitted into a rigid paperboard box are five inner cartons. A large one to the left of the box holds three rolls of tape in varying widths, wound on spools and held in a stationary position side by side. Four smaller folding cartons to the right of the box, stacked one on top of the other, each contain a different size of round, die-cut tabs ranging in size from $\frac{1}{2}$ in. to $1\frac{1}{4}$ in. Each of these folding cartons holds paperboard dividers, separating the contents into four groups. Photo shows three inner cartons within the box, cover torn off to show contents, and the fourth with cover along side the box.

CREDIT: *Kit, Shelby Paper Box Co., Cleveland, Ohio.*



DESIGN HISTORIES

Cookies and spice

Affiliated Bakers Co. of New York introduces its new line of cookies in almost cubicle folding cartons each with its own distinctive design which accentuates the type of cookie in the package. The first three to reach the retail market are Scotch Oatmeal Cookies in a red, yellow and blue carton with a Scotch plaid background; Spice Drops, in predominantly red and blue with an old-fashioned theme, and Lady Luck bridge cookies, with a blue background illustrating actual-color cookies.

All three boxes are overwrapped with cellophane. Interior packaging is sufficient to protect the product from breakage. A circular center is provided by means of a roll of fluted waxed paper and a rectangle of the fluted material lines both the top and the bottom of the box. The Scotch Oatmeal and Lady Luck cookies use a mailing-lock type carton with a tab, die cut in the face of the carton, which slips under the top locking the box so that the contents will not spill even when turned up-side-down.

Another product of the same company is the glass jar of Rum Fruities, a fruit cake in rum sauce, which uses a yellow and green label to attract attention. The edges, the reproduction of the cake and the rum cask are an antique brown to give the whole a pleasing color combination and, at the same time, convey a "vintage" feeling.

(*Page 117*)

Versatile drug label

The recently established Denison Laboratories, when planning its packaging program for DL pharmaceuticals and ethical drug products, encountered several label design problems in addition to the paramount one of keeping the appearance of the packages distinctive as well as conservative.

The label design had to look well on dark as well as light bottles and against a variety of liquid colors. It had to be adaptable to large or small, round or square bottles and allow sufficient space for all the copy required by law. These requirements were all met successfully and, in addition, the designer managed to take away some of that too-familiar look of the stock bottle.

The color scheme chosen is a light warm gray with imprinting in rusty red to match the cellulose band around the cap. The trademark is reverse printed on the rusty red background. Type chosen for copy in most cases is a modern sans serif face to avoid filling in on press.

CREDITS: *Designer, Margery Markley, New York. Printer, John W. Little Co., Pawtucket, R. I. Engraver, Bickford Engraving Co., Providence, R. I.*

DESIGN HISTORIES

Display box decorator sets

By packaging cake decorator sets as ensembles, the Wecolite Co., New York, has given eye appeal to utility items that brings them out on the counter. The de luxe set includes a large cloth bag with plastic screw attachment, six interchangeable sanitary plastic decorating tips and three cookie makers of different design. Smaller sets have fewer decorating tips and do not provide cookie makers.

The paperboard set-up box of the de luxe set is fitted with a paperboard platform. The cloth bag is slipped through the printed figure of a hand, die-cut in the platform and each of the other items is fitted in die-cuts provided. The peach-colored box is lettered in contrasting brown and white. A folding box is used for the smaller set. Brightly colored in red, white and blue, this box has a die-cut cover which folds back into a display container when opened. The smallest set is not boxed, but is packaged in a cellophane-faced envelope stapled to die-cut paperboard.

CREDITS: *Boxes and cards, Specialty Press Corp., New York, and Belmont Paper Box Co., Inc., Brooklyn, N. Y.*

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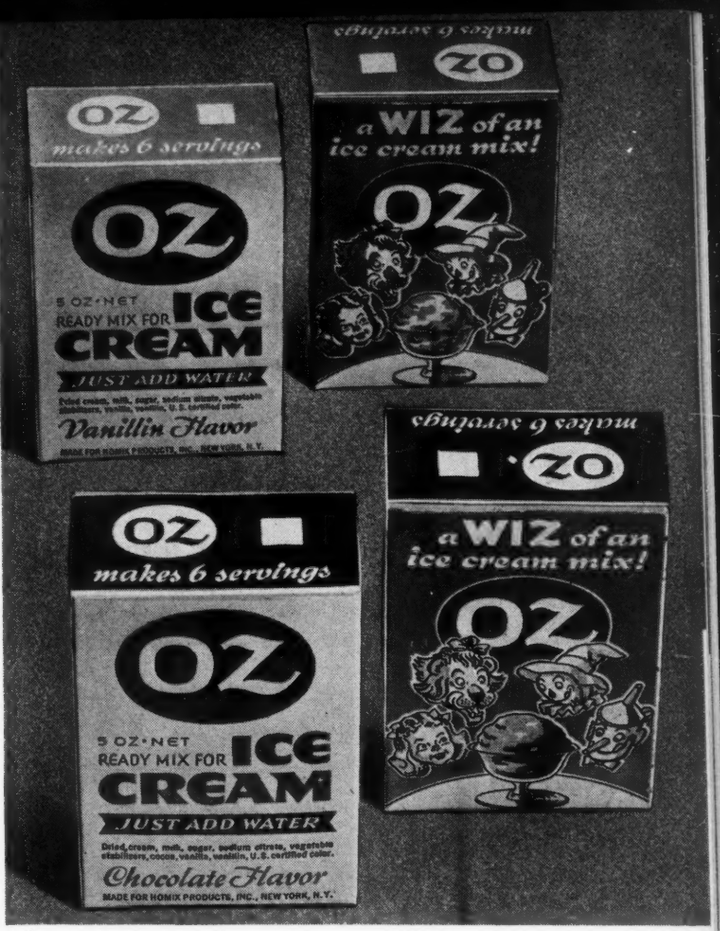
Oz characters for "mix"

The children's favorite dessert, ice cream, is tied in with the children's favorite story, "The Wizard of Oz," on this newly designed carton for Homix Products, Inc., ice cream mix. The rights to the title of the book were purchased to evolve a trademark and a package with a definite appeal to the youngsters of the family. In fact, the company plans to build its entire promotional campaign on arousing the interest of the children in its new product.

Before adoption, the package was shown to several thousand people and, despite the fact that the carton had never been on a grocery shelf, 82% immediately tied the name "Oz" with the book and recognized the characters on the package. These characters were drawn for Homix by Keith Ward, who created "Elsie, the Cow," and will be used in all promotional pieces and advertising copy.

Inside the carton, the mix itself is packaged in a 75-lb. bleached plasticized triplex Lamofilm bag with thermosealing top and bottom for added moisture protection.

CREDITS: *Design, Lucian Bernhard, New York. Bag, Benj. C. Betner Co., Devon, Pa. Carton, Robert Gair Co., Inc., New York.*



DESIGN HISTORIES

The glamour pen

Few new products in recent years have made such a splash in marketing circles as the Reynolds pen—the pen with the ball-bearing point that writes dry and writes for two years with one filling. More than 2,000,000 have been sold in a few months.

In keeping with the product, the package also is a departure from tradition. A transparent tubular acetate cover reveals the pen thrust into a metal desk stand 3 in. in diameter and 1 in. high. The acetate is curled and cemented to form the body section and the top is partially drawn. This transparent inner package not only adds glamour to the pen on display but serves to protect it from dust and dirt and excessive handling by the curious public.

The outer package, a tubular fibreboard telescope box, follows the contours of the inner package. The general appearance of luxury and quality are maintained by means of utter simplicity in design. Gold leaf on the royal blue flocked container is the only decoration for the outer package for this unusual pen.

CREDIT: *Entire package, W. C. Ritchie & Co., Chicago.*

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Air cargo problems . . . the carriers' viewpoint

*by Emery F. Johnson**

Like the proverbial "Gold Dust Twins," problems of air cargo and packaging are inseparable in this Age of Flight, with the flying of commodities a living reality. Just as the plane offers lightning-like and safe delivery of goods, proper packaging assures their arrival in excellent condition at lower transportation costs.

By coordinating their facilities and research activities, the packaging and aviation industries stand to explore new fields of commerce as air cargo expands to remote corners of the world. Together they can provide the greatest amount of load-carrying strength with the lightest construction weight conceivable in modern transportation.

* Secretary, Air Cargo Traffic Section, Air Traffic Conference of America.

The fact that air cargo increased more than 650% during the war years, when the 23 United States flag airlines alone flew 850,000,000 ton-miles of vital goods for the Army and Navy in war-tinged operations, is indicative that shippers of almost every type of commodities are familiar with air transport.

However, to educate all manufacturers and shippers of potential airborne products, the air carriers and packaging interests must work hand in hand in perfecting the proper containers for various types of articles.

It is for this purpose that the Air Transport Assn. of America, representing the scheduled airlines, has created a Shippers Research Division, under the direction of Homer S. Youngs, former chief of the chemical

1—Aircraft most widely used today are limited in size of their access doors. Big packages must be broken down into small ones. 2—Baby chicks, in ventilated corrugated cartons, benefit by air shipment. Market for chicks has thus been extended to foreign countries. 3—Wirebound veneer crate, in place of nailed wood box, saves costly tare; is widely used for produce. Corrugated carton, which can be insulated, is popular.

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PHOTO 2, COURTESY PAN AMERICAN WORLD AIRWAYS

laboratory at the Santa Monica plant of the Douglas Aircraft Co. This division will fill a long-felt need for a centralized airlines agency capable of making a competent study of various types of goods and their problems as they relate to transport by air. It will study and prepare regulations dealing with the safe transportation of all types of commodities. In this it hopes to work very closely with package users and suppliers, who have unexcelled research facilities for the solution of specific problems.

Air cargo may be roughly divided into three categories: (1) the unpackaged pieces that can be stowed or tied down, such as household goods and machinery; (2) ordinary packaged articles that may range from bundles and bales to crates and sacks; and (3) fragile and perishable items that require added attention. Each classification demands special study.

To manufacturers of articles heretofore unfamiliar to air transportation but now being considered for air shipment, the Shippers Research Division will offer a means of determining what procedures should be followed in preparing them for shipment; to the packaging suppliers, it will eventually be able to lend assistance in recommending the proper materials for air cargo packaging.

Included in the studies of the new division will be pressure changes due to altitude and their relation to packaging, and corrosive properties of materials with respect to aluminum alloy aircraft.

The airlines have some definite things in mind. They are interested in finding a vaporproof, self-pres-

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PHOTO 4, COURTESY UNITED AIRLINES

3 PHOTO 3, COURTESY UNITED AIRLINES

4—Transcontinental rush-shipment of fashions is a booming air cargo item. Dresses are sealed in bags of transparent film, hung on racks in plane. They arrive clean, fresh, ready for sale.

sure-equalizing container for flammable liquids, and also a vaportight can for paints and pigmented materials which present a problem of flammability, particularly hazardous in the air.

They seek a good absorbent material for packing of containers holding liquids. They will be interested in the use of "unbreakable" bottles for certain commodities. They are also particularly concerned with the safe packaging of flash bulbs, safety matches, nitrate, motion picture film, explosives, radium and radioactive materials, compressed gases and a host of oxidizing agents.

When the new division has had time to evaluate properly the requirements of these and other articles for air shipment, it will be in a position to pass along vital data that will be helpful in the search for new and improved packaging materials. Meanwhile, the progress already made by the packagers, coupled with the research they are constantly conducting, will go far toward solving the packaging problems of air cargo.

The present plight of air cargo operators is similar to that faced by other modes of transportation in their development. Just as railway transportation spurted during the Civil War and the trucking business came into its own in World War I, air transport made its mark in the recent world-wide conflict when speed proved of paramount importance.

Consequently, the packaging industry was overtaxed to provide revolutionized packaging methods on the spur of the moment for every type of goods and, as a result, a make-shift procedure was followed momentarily in many instances, with the consideration of cost a secondary factor.

Now that conditions are returning to normal, shippers are thinking in terms of permanent, practical and inexpensive packaging—whether the contents come in liquid or solid form, are bulky or light, fragile or sturdy, and whether they require a special odd-shaped container or may be secured in an ordinary package.

This means that the ingenuity of every segment of the packaging industry—glass, wood, plastics, paper and light metals alike—will be taxed to the limit to provide established methods for safely transporting numerous commodities that did not necessarily take wings in time of war.

The need for special studies in packaging will become more pressing in the future as air cargo rates, already tipping the 15-cent ton-mile figure, plummet within range of the mail order houses and sundry other potential shippers of goods in large quantities.

Among the main problems that momentarily confront air carriers are the restrictions on the size and weight of shipments. Doors of planes now used for cargo service are insufficient to accommodate over-sized packages. Also, floor loading is confined to certain weight limits. However, once an all-purpose cargo craft that meets the requirements of the scheduled operators is perfected by aircraft manufacturers these problems will be eliminated.

But the one big problem that must always be considered seriously is the elimination of all unnecessary bulkiness in airborne packages, since it entails not only wasted plane space but excessive transportation charges and increased packaging costs.

It goes without saying that the weight of air shipments must always be kept at an absolute minimum. Unlike surface shipments, airborne packages receive careful handling. Hence, while they must be packed securely, they do not call for massive crating. Air shipments too large to handle often may be loaded easily into planes if they are repacked into smaller units.

What the scheduled air carriers need in the way of specialized packaging is not entirely crystallized because of the limited experience in the shipment of many types of articles, but they maintain that the heavy, costly crates and bulky packages in which merchandise is customarily packed for shipment by rail or sea must be dispensed with in air shipments—or, at least, in the air leg of the transportation journey.

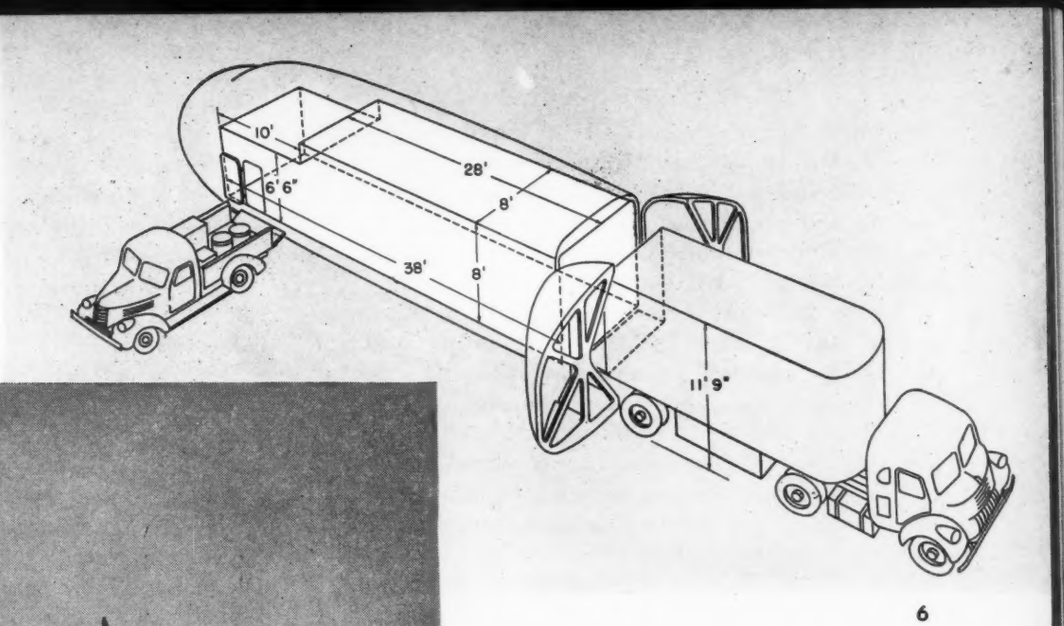
Methods of packaging air cargo shipments deserve the utmost consideration of every prospective shipper. Take, for instance, a manufacturer who regularly uses air transportation for a product that is packed inefficiently from the standpoint of bulkiness. If he has just an extra half-pound of packaging materials on each of the items he ships, it is easy to imagine what his "overweight" would amount to in extra transportation charges on 100 shipments, not to figure the extra cost of the wasted materials.

The packaging of the average airborne goods presents no serious problems *after* it has been decided what is the most practical and efficient shipping box or wrapping material to use. Airline cargo charts give simple and easy-to-understand instructions. With the packaging material selected and by using the charts as a guide, packing and sealing are mere routine.

Concerning the selection of materials, packaging experts are in agreement that containers must be designed for utility, safe carrying qualities and attractiveness. The expense to the manufacturer and the

5—*Flexible corrugated which provides wrap and cushioning all in one in a minimum of space, makes an ideal package for many airborne articles, large and small.*

PHOTO 5, COURTESY SHERMAN PAPER PRODUCTS CORP. 5



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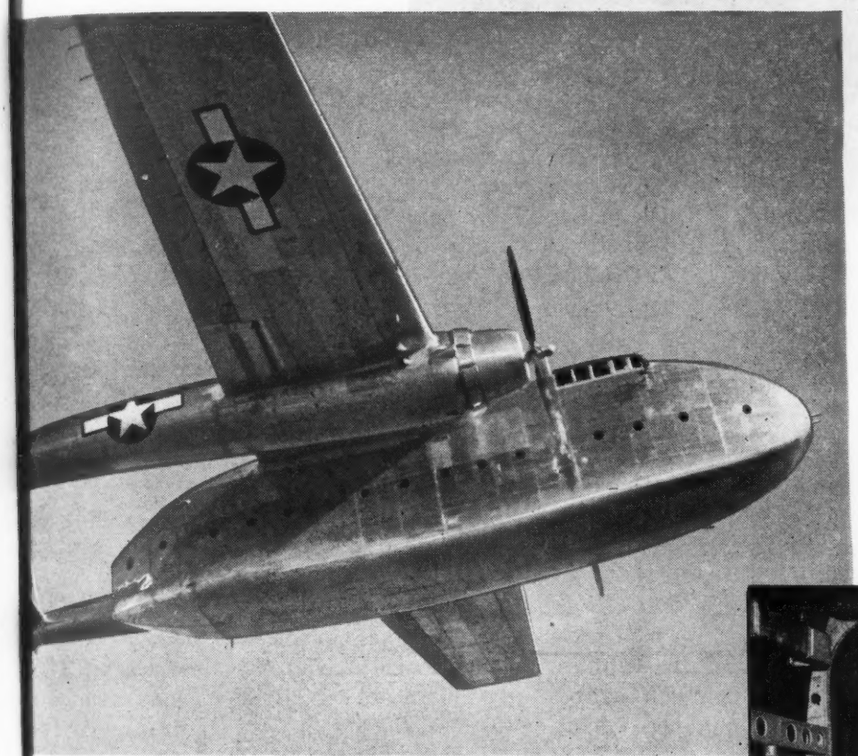
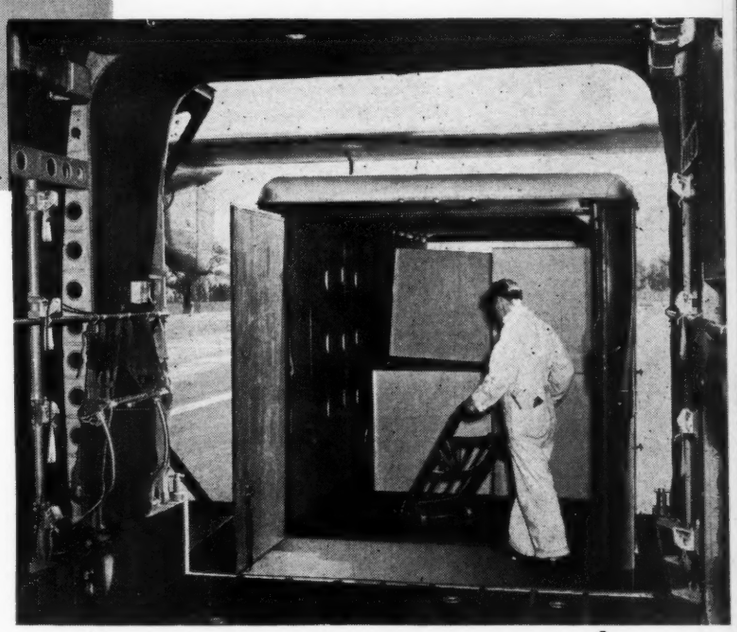


PHOTOS 6, 7, 8, COURTESY FAIRCHILD AIRCRAFT CORP.

7

6—Fairchild Packet, all-cargo plane, has no waste space in squared fuselage, presents no difficulties in loading. Maximum package dimensions are those of fuselage itself. Trucks load from two doors. Except for pilot's compartment at front above it is all cargo space.



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ultimate cost to the consumer must also be reckoned with in determining the best packaging methods in saving time, space and materials, and to reduce waste and lower transit damages.

As an example, the past experience of makers of corrugated containers is indicative that they will be able to solve many of the problems relating to air transport. The special corrugated boards, coated materials and adhesives, plus the manufacturing processes and techniques developed by the industry to make safe shipment of war goods, promise to deliver efficiently various civilian airborne commodities.

There is also available a tough, flexible corrugated material which combines the protective qualities of corrugated paper with the folding qualities of heavy kraft wrapping paper. By wrapping and cushioning at the same time, it will often provide tailor-made packages at a great saving. In shipment of small, odd-shaped articles this material is said to be ideal. The "close-fit" secured with it eliminates the use of over-sized cartons, excelsior and shredded paper for inner packing, and reduces delivery costs to a minimum. Bulky items, difficult to wrap and protect, are a natural for this wrapping material.

Other wartime packaging requirements that gained

7—Literally a box car with wings, Packet cruises at 200 m.p.h. with 9 tons of cargo. Air cargo will reach its most economical level when planes like this are in wider use. **8**—*View from the inside of the big squared fuselage of Packet shows how doors swing wide open at back, permitting truck trailer to be backed up for loading with floor level with floor of plane. This plane, with capacity of 2,870 cubic feet, will take a package or crate as big as 8 by 8 feet. Rapid loading and unloading is one secret of successful air cargo operations.*

prominence due to the necessity of shipping materials to the Pacific, Alaska, Africa, Aleutians and other points, include methods of temperature and humidity control and prevention of corrosion, mold formation and insect infestation. With recently developed materials, there are ways to meet these requirements.

Among materials certainly applicable to air cargo are light corrugated and solid fibre containers, boasting weather and chemical resistant insulation and capable of protecting its contents from impact and shock. This type of package, in time, stands to equal if not surpass the metal container in many respects.

Likewise, new shock-absorbing products such as sponge rubber and fibre will replace the less effective packaging materials employed in the past to protect fragile goods. This should result in increased shipments of articles such as glassware, drugs, phonograph records, timepieces and other breakables, since ordinarily it is this type of merchandise that possesses an unusual value, and because of this fact can well afford the use of air transportation at present rates.

The manufacturers of wirebound boxes also give promise of developing lightweight shipping containers and packages with greater flexibility and easier handling, particularly for use in heavy loads. Their object is to provide a wirebound package for goods which cannot be adequately flown in paper or fibreboard boxes and containers.

One test case with two types of boxes designed to carry ten bottles of acid—one a conventional nailed wooden box and the other a wirebound box—revealed that because the latter, taking strength from its wire and staples, used much lighter wood, its tare weight was 19 lbs. as compared to 28 lbs. for the nailed box. Both boxes met requirements as to safety, rough handling and other hazards.

Another test involved a nailed wooden box and a wirebound box of comparable durability, built to transport 32 one-pound bottles of acid. The nailed box weighed 36 lb. in contrast to $19\frac{1}{4}$ lb. for the wirebound.

A great deal of experimental work has been done on the packaging of perishables, particularly foodstuffs and flowers. This work has been fully described in past issues of MODERN PACKAGING.* Manufacturers have offered a variety of dry and wet packs.

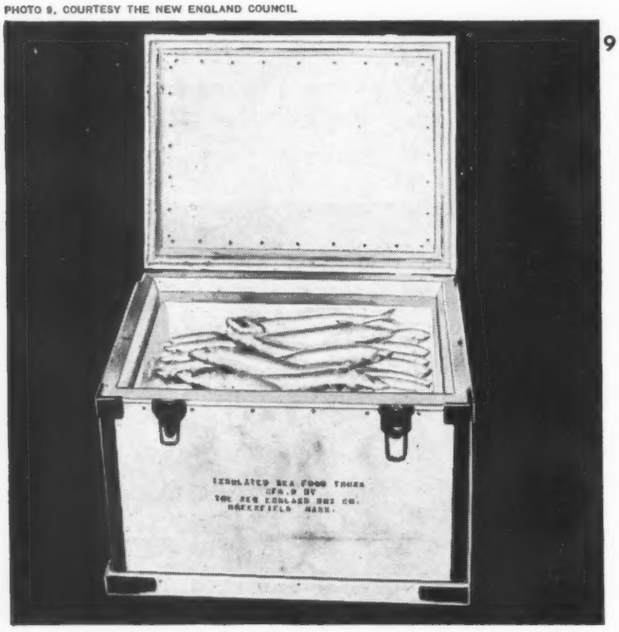
To simplify the tie-down problem and allow maximum efficiency in handling and loading, as well as to reduce packaging requirements and tare weights, there is a definite need for uniform standard containers in which unpackaged articles may be placed. They must be light in weight, virtually collapsible, inexpensive, sufficiently sturdy and easy to handle. Some may even be used for repeated shipments.

True enough, the full potential of air cargo cannot be immediately developed, due to its overnight growth, but a vast expansion may be expected shortly as it proves itself a safe, swift, flexible and economical means of traffic for an increasing number of shippers with merchandise that will benefit by flying to market.

* See "Produce by Air," Nov., 1945, pp. 96–100, and "Flowers by Air," Jan., 1946, pp. 101–103.

PHOTO 9, COURTESY THE NEW ENGLAND COUNCIL

9



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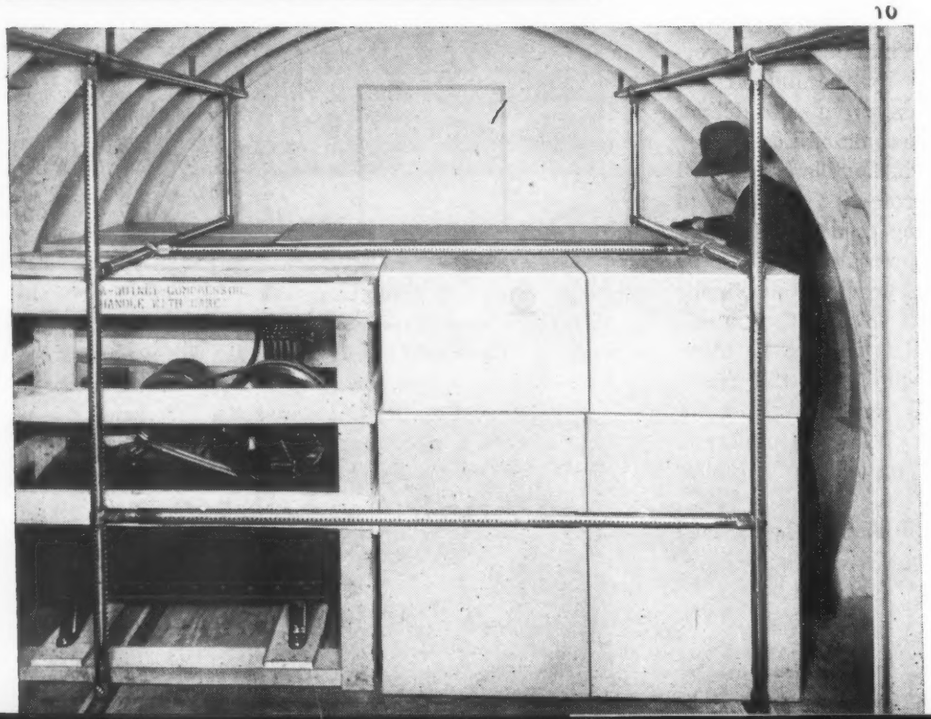
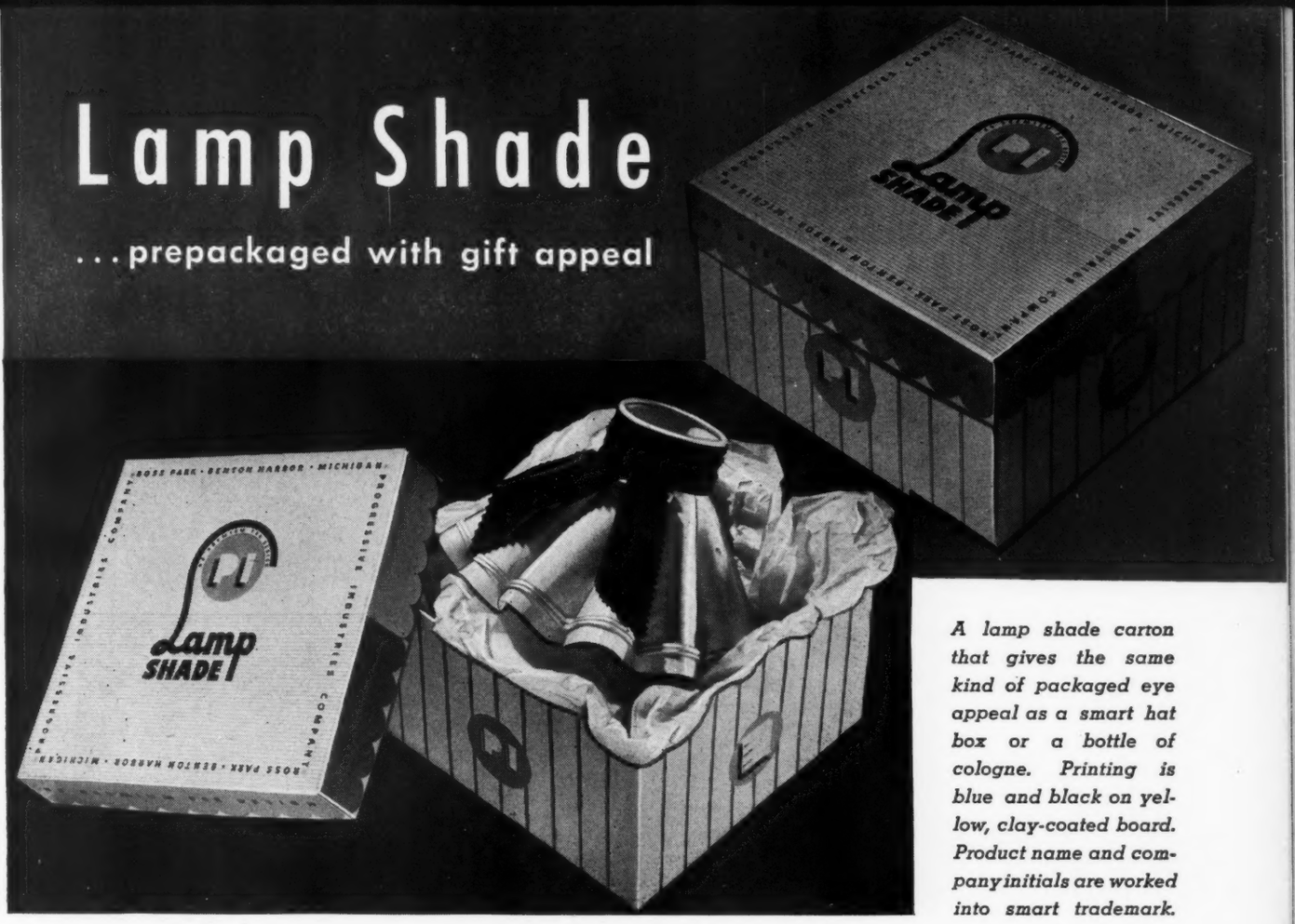


9—Insulated "seafood shipping trunk" is re-use container developed by fisheries and New England wooden box industry, made by The New England Box Co. Heavily lined with cork, it uses dry ice refrigerant. **10**—*Firm hold-down of cargo to prevent shifting is a must in airliners. This simple adjustable hold-down equipment, devised by Evans Products Co., was introduced just before the war.*

Lamp Shade

. . . prepackaged with gift appeal



A lamp shade carton that gives the same kind of packaged eye appeal as a smart hat box or a bottle of cologne. Printing is blue and black on yellow, clay-coated board. Product name and company initials are worked into smart trademark.

The kind of prepackaging that will be seen in the department stores of the future is indicated by this new carton for a Celanese-Lumarith lamp shade made by Progressive Industries, Benton Harbor, Mich.

This lamp shade, of taffeta laminated to cellulose acetate, is packaged with the same intention of eye appeal as a smart hat or a bottle of cologne. It is said to be the first time a lamp shade manufacturer has taken such a progressive step in packaging.

Most lamp shades are purchased by women, the company reasons, and by attractive packaging this product can be presented as a gift item.

The folding, two-piece carton is made of 0.024 yellow, clay-coated, news-back stock and is printed in two colors, light blue and black. Around the sides of the cover, in alternate blue and yellow background, the use of scallops relieves the hard-looking edge where the vertical lines on the box meet the cover when the carton is closed. Thin blue lines run horizontally across the cover and thus relieve a surface which has a yellow background.

Product name, "lamp shade," has been worked with the company's initials, "P. I.," to form an identifying trade mark, which is designed to bear a likeness to an actual lamp and shade. The company name and address, repeated twice, form a border around the entire lid and are thus an integral part of the cover design. The circle is printed in blue allowing the yellow background to show through. The remainder of the cover printing is black.

On the sides of the box, the lines are blue and black alternately, with a circle printed in blue with reverse lettering in the yellow background. In the circle, the company's initials are bordered in black. On one side of the container, the circle is used for such data as price, stock number and color of the product.

The bottom of the carton is made with an overlapping "Higgins" or "hardware" lock. The cover is glued sidewall folding type, easily set up.

The complete design of box and construction was developed by the Design Laboratory of Container Corp. (see page 95). It was tested by the laboratory's special methods for sales appeal, service, visibility, distinction and suitability of the product. The colors—yellow, blue and black—were chosen and distributed to give a feeling of charm and because of appropriateness to the product.

This new package presents the product to best advantage from the time it leaves the manufacturer's plant until it reaches the user in the home. It is in line with what many manufacturers of previously unpackaged merchandise are doing to bring their products in factory-fresh condition to the user. Its acceptance by the public will have a favorable effect on store buyers who are always looking for merchandise that is quick-moving because of its attractiveness on the counter.

PACKAGING PAGEANT

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1 With the lifting of wartime restrictions, Leigh Perfumers have redesigned their line of four perfumes from lie-down packages to stand-up packages. The new more gracefully shaped bottles are set into transparent polystyrene bases and the telescope lids have an added touch of elegance—a covering of metallic paper. The new easily removed closures are also polystyrene and are said to prevent leakage. Although the basic package is the same for all four scents, the appearance of each is keyed to designate the mood of the perfume. Risqué has a gold wrap; Heartbeat is in silver; Poetic Dream is silver with pearl gray undertones; Dulcinea is silver-green.

2 Made in Cuba, of cedar wood, this miniature barrel contains 25 high-quality Havana cigars. Its authentic appearance is heightened by the use of metallic paper to simulate the hoops. The trade name and other information is burned into the wood making a pleasing color scheme with the natural color of the cedar.

3 C. H. Masland & Sons of Carlisle, Pa., makers of hunting and fishing clothes for men, are fully aware of the merchandising value of the package, as evidenced by this full-telescope box for their products. Getting away from the dull outer packaging characterstic of men's furnishings, this box uses stylized drawings of fish, birds and animals in black against a blue-green background. The center figure is a dark brown and all lettering is in reverse white. Designer, Charles Dean. Box, Geo. H. Snyder, Inc., Philadelphia, Pa. Lithographer, Schlegel Lithographing Corp., N. Y. C.

4 A cream-colored, leather-like covered set-up box lined with red holds the new Travel Set, Shulton's first packaging job in the Early American Old Spice men's line since the war. The two miniature containers for lotion and talc are exact reproductions of the larger sizes and are made of pottery glass with metal plug-type closures. The shaving stick is injection molded of acetate in two pieces and carries a removable, printed cellophane band instead of a label.

5 Cher-Chair, a folding plastic toilet seat for infants, made for the Dunton Mfg. Co., Chicago, comes

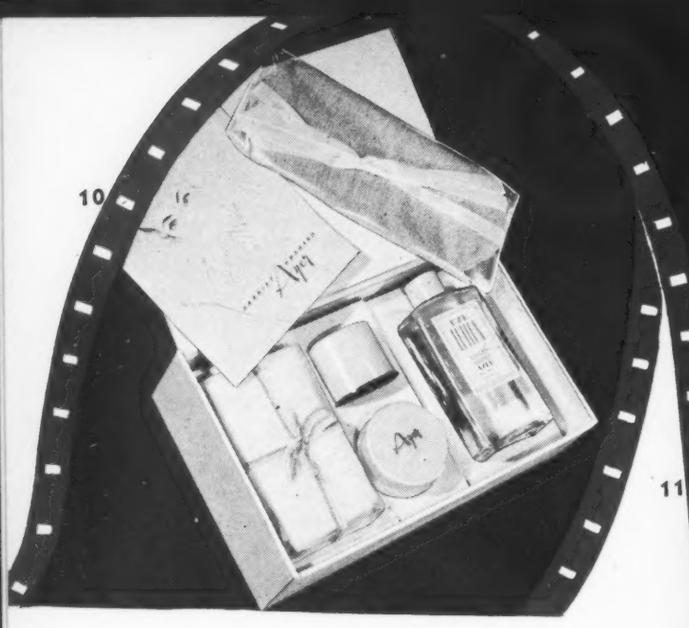
packed in this sturdy folding box which adds considerably to the merchandising appeal of the article. Measuring 13 in. high, 15 in. wide and 1½ in. deep, the package, patterned after the popular airplane luggage, is constructed of 40-mil kraft paper, printed in red and black, and includes a carrying handle. Box, Waldorf Paper Products Co., St. Paul, Minn.

6 A double-size, lock-end carton holds two 1½-oz. tubes of Pepsodent tooth paste which Lever Bros. is offering as a special two-for-29-cent deal. The carton, with a faint score line down the center, gives the impression of two separate packages bound together the only addition being the brilliant red-and-white announcement of the sale price. Carton, American Coating Mills, Elkhart, Ind.

7 One of the first unusual metal lipstick containers to re-appear this spring is this chunky oval-shaped one for Suzy's lipstick. The silhouette is simple and classic with a narrow metal band at the top, bottom and middle, and the name etched in a simple design. The swivel mechanism is operated through an opening at the base of the case. Container, Bridgeport Metal Goods Mfg. Co., Bridgeport, Conn.

8 An embossed paper, which almost gives the feel of embroidery, covers the hinge-lid box for Coty's latest perfume—Muse. The rich luxury of the design is heightened by subdued use of brown, red and blue coloring over an oyster white background and by the off-white stain which lines both the platformed base and the recessed lid. The starkly simple bottle is set off with an unusual closure. Over the conventional ground glass stopper is slipped a hob-nail glass cap and over all is a gold cord which holds it securely.

9 "Thiouracil," a new drug effective in the management of thyrotoxiosis, is now being marketed by the Winthrop Chemical Co. as a prescription specialty through retail drug stores. Dignity of packaging was achieved by means of clear, legible san serif type on the wrap-around label applied to the plastic-capped stock bottle. Bottle, Owens-Illinois Glass Co., Toledo, O. Labels, Hamilton Printing Co., Albany, N. Y.



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10 Harriet Hubbard Ayer packages five items in a paperboard hinge-lid kit to make up the latest set in her cosmetic line—the "Eye Treatment" set. A die-cut platform holds eye lotion with cup, eye cream and eye pads. An eye mask, tied with ribbon and packed in a cellophane envelope, adds the finishing touch.

11 A small, shelf-size wooden rack holds eight bottles of Coronet spices packed by Euclid Foods, Inc., Cleveland, Ohio. Sold as a unit in a corrugated box, the spice rack increases sales and keeps the housewife asking for this same brand for replacements. An unusual feature of the bottles for the spices is the closure. Under the conventional metal cap is a metal shaker top which is fastened right to the bottle but which can be removed for pouring. Bottles, Fairmount Glass Works, Inc., Indianapolis, Ind. Lables, R. J. Kittredge & Co., Chicago, Ill.

12 Set-up boxes in two sizes are used to package these small paper envelopes of "Bubbling Zoo"—a bubble bath for the younger-than-teen-agers. The decorative box-cover paper is alive with soap-bubble animals in brilliant colors, all appropriately named to tie in with the product and each animal representing a different scent. A single piece of paperboard is folded to make a divider for the interior of the box and the packages are laid on top of a platform which is die-cut to provide a pull tab to pull the envelopes up. Box, Hollywood Paper Box Co., Los Angeles, Calif.

13

13 A simple, colorful label plus an unusual cap add merchandising appeal to the stock jar used for Marks "New Recipe Salad Dressing." The sell copy, "Whirl Whip," is stressed by the tie-in with the whirl toy for children which can be made by punching holes in the cap and inserting a string. Design, Lucian Bernhard, N. Y. C. Jars, Anchor-Hocking Glass Corp., Lancaster, O. Caps, Phoenix Metal Cap Co., Chicago.

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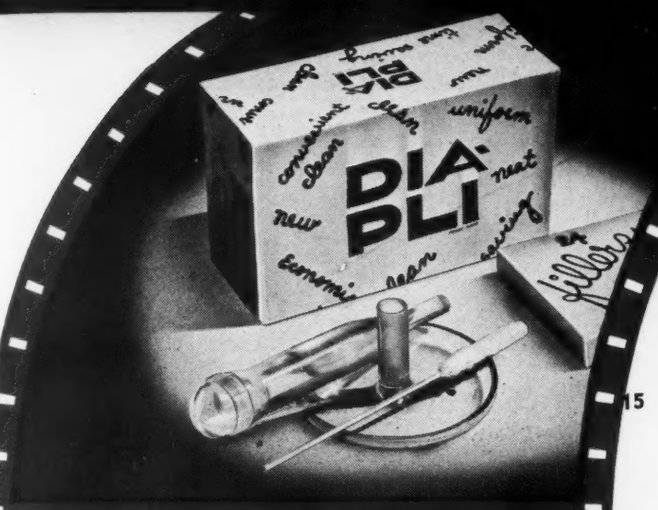
14 After a two-year absence from the market, "Quickies" are back in a glass jar with metal screw cap and outer folding carton. A refillable glass

PACKAGING PAGEANT



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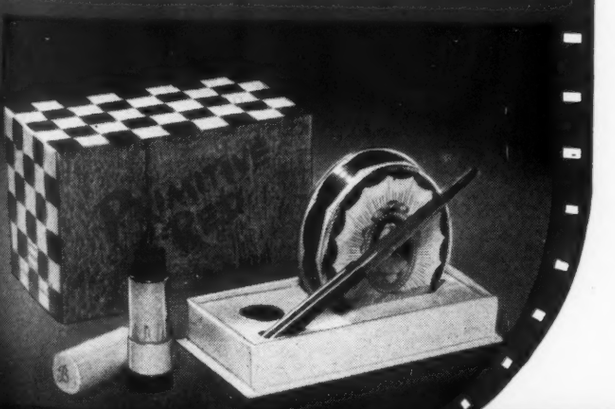

18

compact-type case holds 25 of the quickies and is included in the package for purse use. According to the company, the glass-bottomed compact will be replaced with metal in the near future. Jar, Hazel-Atlas Glass Co., Wheeling, W. Va. Cap, Crown Cork Speciaty Corp., Decatur, Ill. Label, Geo. F. McKiernan & Co., Chicago. Carton, Affiliated Packagings, Chicago.

15 The Eastern Laboratories, Inc., makers of Dia-Pli, a handy dispenser for beauty salon use in applying hair dyes, recognize the importance of attractive packaging as a selling tool for the beauty trade. This full-telescope box in yellow and black uses the sell-copy for the product as an integral part of the design of the package. The all-over script tells the advantages of using the applicator over the old-fashioned method. Each large package contains the applicator cushioned with a cellulose wadding plus a flat set-up box of 24 fillers. Designer, Leonard Bruce, New York City. Box, Prompt Paper Box Co., Brooklyn.

16 A squat, wide-mouthed jar with label applied directly to the glass is being used by Charles of the Ritz for "Spring Rain," his new body sachet. The folding carton used for outer packaging displays a delicately designed umbrella filled with spring flowers.

17 An amusing label wrapped around a fibreboard tube forms the package for "Tumblers," a confection made by the Regal Candy Co. Spot-check field survey of the pulling power of this new label with its acrobatic trade characters has proved that retailers are voluntarily displaying it in front and center positions. Labels, Lord Baltimore Press, N. Y. C. Tubes; Platt Corp., Baltimore.

18 Anna Mary Robertson Moses' chromatically brilliant landscape, "The Checkered House," inspired the decorative paper covering for the set-up box used for Du Barry's new Primitive Red package. It is in soft wood tones banded with red-and-white checks with the name in red brush strokes. The die-cut platform holds lipstick, powder, lipstick brush.

1 and 2—Former package for wire wheel brush had no merchandising force, used corrugated board where it was not necessary. The new package (above) introduces a trade name for the product and a simple but forceful design motif. Important elements of labeling are played up in neat, all-over design of the paperboard folding carton.

Committee approach *to industrial packaging*

Package-consciousness is a fairly recent development in that broad industry which manufactures tools and accessories primarily for industrial rather than consumer use. Even today, few companies in this field have a permanent packaging committee to deal—as do most wide-awake manufacturers of consumer products—with all angles of the packaging question.

Of particular significance, therefore, is the Packaging Committee set up six months ago by The Black & Decker Mfg. Co., Towson, Md., widely known and respected maker of industrial tools and accessories. Some of the first fruits of this committee's work are illustrated on these pages. But the real story is in the make-up and functioning of the committee—which may well serve as a model for other companies in related lines where a modern packaging approach is sorely needed.

Suggestion for the establishment of a Packaging Committee originated with Black & Decker's sales manager, who believed that a coordinated and well-planned packaging program would not only pay dividends in added merchandising value but would greatly facilitate handling of the company's products both at the manufacturing plant and by the distributors.

The committee was appointed by management and consists of five members:

1. The advertising manager, who represents sales and merchandising and serves as chairman of the group.
2. The assistant production manager in charge of assembly and packing, who is responsible for the physical packaging operations in the plant.
3. The traffic manager, who controls finished stock and shipping and acts as the committee secretary.
4. The chief engineer, who is responsible for the design of products and whose department writes specifications for packages and labels.
5. Engineering assistant to detail specifications.

The duties of the committee were specifically outlined. Members were instructed to study the entire packaging and labeling set-up of the company's prod-

ucts and to make recommendations to management on the following:

Standardization of labeling

1. To identify the entire line as a "family."
2. To provide greater visibility and legibility of labels.
3. To reduce the number of sizes and varieties of labels.

Improvement and simplification of packaging

1. To provide improved protection for various items of units and accessories.
2. To improve the merchandising value of the box or package where display on the distributors' shelves or counters is a factor.
3. To group certain accessories in convenient assortments and quantities.
4. To simplify stocking of the company's products by the distributors.
5. To simplify the packaging operation in the company's production department by reducing the number of kinds and sizes of packages and by speeding the assembly and packing operations.

The Packaging Committee was authorized to confer with and ask assistance from any other company departments, such as market research, methods (for comparative cost studies), purchasing and service. The use of outside sources for design, art work, samples of materials, etc., was also authorized.

Specific and detailed recommendations of the committee are made to management on the completion of its study of any specific packaging problem through a management conference, where the Packaging Committee's recommendations are either approved, disapproved or modified for final adoption.

The importance and need for the committee were immediately evident to its members when, as one of its first acts, the entire committee visited the stock rooms of several Black & Decker distributors. They saw the need for more legible labels and for better identity of the company's tools and accessories as a "family." The visit also enabled members of the committee to study good and bad examples in the packaging of other lines handled by the same distributors and to note the condition of Black & Decker products in comparison with others after handling by forwarders and stock clerks.

The work of the committee is not confined, however, to an improvement in merchandising value of packages for the company's products. Its over-all job encompasses a large line of over 100 different types of tools (from a small electric drill weighing 3 lbs. to a complete electric-valve reconditioning shop weighing 332 lbs.) and nearly 3,000 accessory items (from tiny screw-driver bits and precision spindles to large cast-iron grinder pedestals). Some items move directly to an industrial user's plant and are put to immediate use; here protective packaging is the only consideration. Display value, convenience and re-use are, however, important in packaging those items which are displayed by distributors or are kept in their packages when not in use.

The need for packaging committees in many manufacturing organizations is reflected in resolutions passed and requests made by many industrial trade associations recently. These call the attention of the manufacturers to the problems of distributors in identifying brands, individual items, quantities packaged and catalog numbers, and ask for some standardization in placing this information on packages and labels.

The Black & Decker Packaging Committee meets once every two weeks. Since it has only been functioning since September 1945, most of its efforts have been of a research nature. Some tangible results have been produced, however. The group has developed a packaging system and has made pilot studies of individual items in various classifications, developing new packages and labels for actual trial and test in the market to be applied to the entire classification, if successful.

A typical result is the new package for a wire wheel brush, an industrial item of considerable volume.

With the old package, some attempt at merchandising advantage was made by printing the company name and product identification in large block letters on the "blotter" of the brush. But it was still just a brush, albeit a Black & Decker brush; it had no suggestive trade name or symbol. And the package—a plain corrugated carton with company name and product identification printed in a matter-of-fact way on only one small side panel—was a typical example of the uninspired packaging formerly used.

Contrast this with the new package. An impressive trade name, "Whirlwind," has been adopted for the brush and is played up in bold, black letters both on the

3—Home utility tools are a complete new line for the company. This bright orange carton, printed in black and white, observes the best principles of packaging for consumer merchandising. It not only describes the tool but suggests uses for it, both in words and pictorially.

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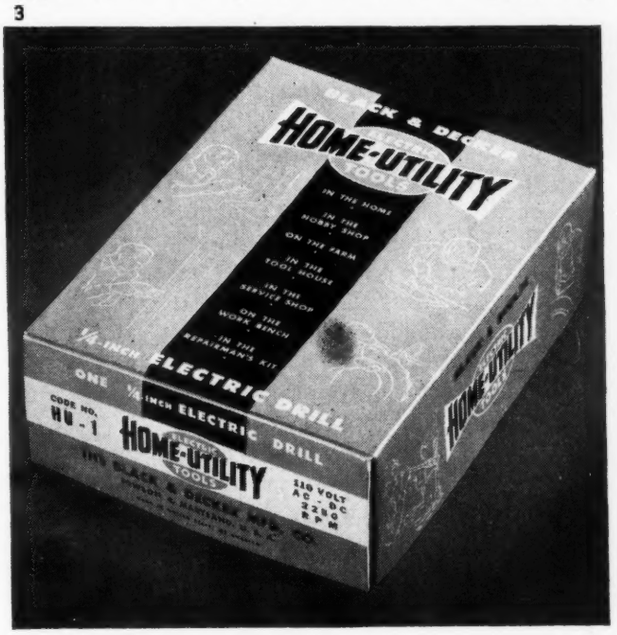


carton and on the brush itself. The idea is further carried out with a simple whirl design in the background. The company name is subordinated to the trade name and the simple identification of the size and type of brush, but it appears to good effect in distinctive type in reverse. The container has been changed to a simple tuck-end carton of paperboard, since corrugated obviously was not needed to protect this product. All panels of the carton have been employed to repeat the product name and identity. The few simple elements of design are carried out in a clean, modern style.

Also developed by the committee is a complete set of packages for an entirely new line of electric tools to be sold through hardware and electrical retailers as "over-the-counter" items. The merchandising of this line is a step beyond the methods used for the company's regular industrial line and required an entirely new approach in the thinking and planning.

Known as the "Home-Utility" line, these electric tools formerly were packed in a common corrugated paperboard shipping carton similar to those used for the shipment of the standard line of industrial tools going directly into plant or shop use, with the trade mark and informative printing on only one end-panel of the box. The new package is a coated paperboard die-cut telescoped box attractively colored and printed. The background of the carton is a bright orange. A wide black panel is centered on the face of the box from top to bottom and a trademark design, together with the company name, appear close to the top, printed in black and white. The name of the tool appears at the lower end of the carton face. Suggested uses for the tool are called to attention by lettering on the black center panel and by figures sketched in white on either side of the panel. Each end panel carries the trademark in addition to informative data. In addition to its merchandising appeal, the box was designed to serve as a re-use container for the tool when not in use.

CREDITS: *"Home-Utility" box by Simplex Paper Box Co., Lancaster, Pa.; "Whirlwind" carton by Maryland Paper Box Co., Baltimore; package designs by Harrison-Landauer Co., Baltimore.*

Viscose cellulose film . . . for a sterilizable package

Unusual in the protection of sterile products is the pa[illegible]e used by Hospital Liquids, Inc., to safeg[illegible] intravenous administration sets supplied on lease to hospitals.

The package employs, as an inner envelope, a piece of seamless cellulose tubing produced by the viscose extrusion process. This transparent material is of the type used for meat casings, but it has seldom otherwise been used in packaging. It is used because it is resistant to high pressure steam necessary for sterilization.

The viscose cellulose is not heat-sealable and it has a high rate of water-vapor transmission, but in this case the prime requisites were transparency and ability to withstand sterilizing heat.

The administration set is used for the transfusion of blood or plasma or the injection of intravenous solutions. It consists of a plastic-and-metal fitting for the bottle of plasma, a needle adapter, and 4 ft. of $^1/_4$-in. seamless dispensing tube. The latter tubing is made of the same cellulose material which comprises the envelope enclosing the set.

The cellulose envelope carries no labeling, but is contained in an outer heat-sealed envelope of aluminum foil, on which directions are printed. The foil bag preserves the contents. Complete sterility is maintained by the inner cellulose wrapping, which is bacteria-proof.

The foil envelope, heat-sealed on top, bottom and one side, has a semi-perforation across the top. The user is instructed to "tear here only," and preserve the bag for return of the set. Instructions are to fold over the end several times and crease to seal.

Upon return, the sets are thoroughly cleaned, re-assembled with new cellulose tubing, sterilized and packaged for another use.

CREDITS: *Viscose cellulose tubing and film by The Visking Corp., Chicago. Aluminum foil envelope by H. D. Catty Corp., New York, using Alcoa aluminum foil.*

2

1—Trade symbol on front of label conveys idea of big value for new line of Devoe quality products planned for distribution in chain stores and outlets other than devoe and Raynolds own retail stores. **2**—*Illustrations on labels are planned to show uses of product so that complete sales story is told without aid of sales person. The printing is orange and black on white background.*

Picture labels . . . that pinch hit for the salesman

This is an era of self-service merchandising. When a shopper goes into a store, in many cases he must select his purchases without the aid of a clerk.

For that reason, the package, more than ever, must take the place of the clerk as a silent salesman. The package must tell at a glance the uses for the product, what it is made of and how to use it.

Somebody once said that a picture is worth 1,000 words. In the past, many manufacturers have missed the importance of pictorial illustration on the package in pointing out the uses for a product.

Devoe & Raynolds Co. has just introduced the first of a series of new labels for its "Giant Value" line of specialty paints and household chemicals. Eventually these will include, in addition to a caulking compound and a utility black paint already on the market, such items as floor wax, furniture polish, window cleaner, soapless washing powders, rug cleaners and liquid hand cream. The line is one planned for distribution of Devoe quality products through chain stores and outlets other than the company's own retail stores.

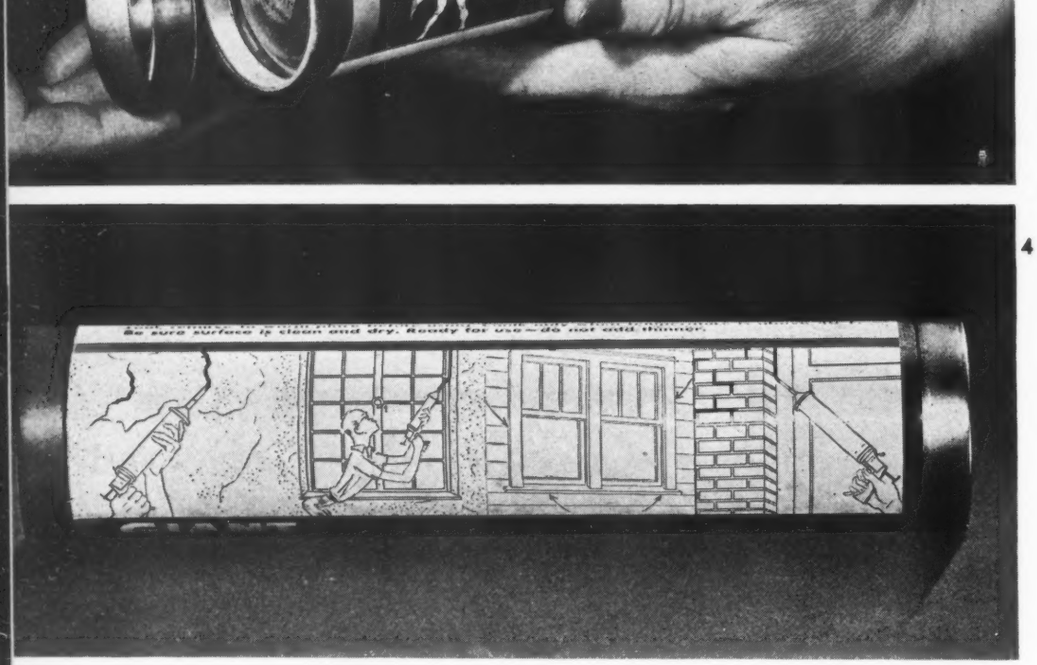
The labels for these products point toward a new trend in the use of the package to carry the sales message directly to the shopper.

That the new packages and displays are paying off in sales is indicated by results on the company's books—615% increase in sales of caulking compound during first three months the product was introduced; 599% increase in utility black paint sales during a three-month period ending September 15, 1945.

First example is the label for the utility black paint. The idea of big value is suggested quickly by the figure of a giant holding up the two words "Giant Value." Another section of the label has four pictures showing the use of the paint for ironwork, for sign posts, for fireplace sets, for window screens, where the paint may be used without clogging. Another section of the label illustrates four more uses: for outside grills and fences, for ornamental railings, for auto chassis, for stove pipes where the paint resists heat. Each of these is suitably illustrated with a line drawing. Three to six words are all that are required to suggest each of these uses, although the pictures tell the story so clearly, you would scarcely have to read a word to know what the product was for. Directions for application are given on the fourth section of the label which is printed in three sizes: 1-gal., 1-qt. and 1-pt.

The labels are printed in two colors, orange and

3 **3—*Caulking compound is packaged in spiral-wound tube, wax laminated for moisture protection with greaseproof liner and metal ends. One end has opening covered with glassine disk. Disk is punctured when cartridge container is loaded into gun.***



4 ***4—One section of caulking compound label carries trade symbol and product name. Second section shown here pictures product uses—for sealing cracks, openings, etc. A third section, not in photo gives directions for loading package into the gun.***

black, for economy and saving of press time which is considerable on mass production items.

The other Giant Value product, a caulking compound, already on the market has been labeled in accordance with similar technique. This is a product that relatively few people knew much about until the wartime fuel shortages. The Government, in its fuel conservation programs, recommended that householders use it. Few, however, knew what it was or had bothered with it previously. Therefore, the package had to tell what the product was for and how to use it. This has been done by a series of four line drawings, showing how the caulking compound, applied by means of a caulking gun, will seal up wall cracks, places where heat escapes around window frames, around doors and in faulty brick structure.

The wrap-around label for the metal-end fibre cartridge container is divided into three sections printed in red and blue. In addition to the illustrative panel, one section presents "Giant Value" brand and product name in large letters. The third gives directions for loading the cartridge package into the caulking gun.

Package is functional

The development of this package is an interesting part of the program. It consists of a spiral-wound fibre tube, wax laminated to give moisture protection and with a lapped-over inner liner of oilproof parchment to give grease protection. The ends of the tube are equipped with swedged metal cups sealed into the tube with the compound itself, thus providing greater oil and moisture protection. One of these cups has a circular opening about $^1/_2$ in. in diameter. Inside this is a glassine disk which is punctured when the cartridge is loaded into the gun. Two metal friction caps complete the package and give final protection.

Point-of-sale pieces

Point of sale material that takes up a minimum of counter space completes the sales story told by the package and is distributed to the retail outlet with the products.

There is a series of four pieces for the utility black paint. All of these pieces illustrate the package in full color.

The large one gives complete use features in four short sentences—"Protects hard-to-replace screens"; "Versatile! Use on ornamental iron fences, railings, auto chassis"; "Heat resisting—apply on andirons or stove pipes"; "Resists weather!" An arrow pointing to the illustration of the package tells that the product contains "carbon black." At the bottom is selling copy about using the paint for screens. A bull's eye gives the price. The smaller cards show specific uses of the paint, illustrated by line drawings which appear on blobs of the paint pouring out of the container. One of these is most interesting. It shows a modern girl in sweater and shorts painting an old-fashioned kitchen range. Stove pipe black is ordinarily thought of as an item used in a bygone day, yet there is still considerable demand for stove pipe paint. The Giant Value label pictures this product to be used "for the stove pipe

in your vacation cottage . . . fine for andirons too."

These display pieces are done in four colors—orange, green, black and brown.

A simple sheet of board, scored to make it stand up as a three-panel display unit, has been developed for promoting the caulking compound. In the center, by means of a die-cut arrangement forming a platform, is a place for a caulking gun which the purchaser of the compound may rent for 25 cents a day. On this three-panel piece is almost everything you would want to know about the product.

The central theme is a homey scene showing Pop and the kids sitting by the fireplace—suggesting warmth. The sales message is "Giant Value caulking compound stops drafts, saves fuel." In quick-paced copy and illustration on the other two panels are all the essential data that the user requires including picture of package and price.

By the time you have read it, you not only know the value of caulking, but you are ready to put your money on the counter for a package and rental of the caulking gun. No salesman is necessary to sell you. Devoe and Raynolds say that even where there is clerk service, the sales force has been much better informed about the products because of these easy-to-read packages and counter displays—an advantage every merchandiser hopes to have.

CREDITS: *Label designs, Egmont Arens, New York; Label printing and displays, Davidson and Hansen, New York.*

5

Elastic
GIANT VALUE
CAULKING COMPOUND
healthy homes are happy homes
COMFORT IN A CARTRIDGE!
CAULKING COMPOUND
39¢ EACH
Contains NO Paraffin Oil
Does not become Hard or Brittle in Cold Weather
Does not Sag in Hot Summer Sun
Forms Air-Tight Protection — Stays in Place!
Seals out Cold and Moisture
Vibration Proof . . . Will not break loose or pull away
Elastic
Absolutely SAFE . . . Will Not Stain
Stops UNSIGHTLY SMUDGES DUE TO DUST SEEPAGE
STOPS DRAFTS · SAVES FUEL
CAULKING COMPOUND KEEPS OUT RAIN · SLEET MELTING SNOW
RENT
THIS EASY-TO-USE CAULKING GUN
25¢ A DAY
REDUCES PAINT FAILURES
CAULK BEFORE YOU PAINT
CAULK BEFORE YOU PAINT

5—Point-of-sale material completes selling story. On a single sheet of scored board is almost everything you would want to know about a caulking compound. Almost at a glance, quick-paced copy and illustration give you all essential data.

6

6—Four display pieces are used for the utility black paint One features all uses; the others, specific applications.

1

2

DISPLAY

3

1 A one-piece, heat-formed acrylic counter display, for billfolds made by Robinson Reminders, features a self-forming easel to hold the product. White silk-screening on the transparent red background makes the trade name stand out in a third-dimensional effect. Display, E. J. Hayden & Co., Inc., New York.

2 Silhouetted paperboard figures are easel-mounted to make this seasonal display an effective sales aid for Ballantine's ale and beer. The fire for toasting the hot dogs is projected in front of the display giving a three-dimensional effect. Display, Einson-Freeman Co., Inc., Long Island City, N. Y.

3 An octagonally shaped paperboard tray is used for the base on an eye-catching counter piece for "Zemacol," a Norwich product for irritated skin. Scored chipboard is set up by the retailer to form five small platforms in the center of display to raise six of the cartons above their neighbors for better visibility. A one-color job, the entire piece, like the cartons, is in green with copy in reverse white. Arrows are provided to point up the seasonal use of the product. Display, Niagara Lithograph Co., Buffalo, N. Y.

4 A new set of easel-mounted counter and window pieces has just been distributed to retail outlets to promote the sale of Dr. Lyon's tooth powder by the R. L. Watkins Co. division of Sterling Drug. The set consists of five pieces in 11 colors and can be used singly or in a variety of groupings. Dummy cartons of the powder, once more in metal containers, are provided to go with the displays. Display, Sweeny Lithograph Co., Inc., Belleville, N. J.

5 An easel-mounted window-piece, mounted on varnished board to prevent soiling, uses eight brilliant colors to attract the passerby to the value of Wyeth's Collyrium. A giant wheels-within-wheels puzzle serves to intrigue the consumer and the offer of a free puzzle booklet brings him inside. The smaller card, to the

4

Highlight the beauty of your smile with DR. LYON'S
America's favorite Tooth Powder because millions must believe it better
DR. LYON'S

HOW KEEN ARE YOUR EYES?
Count letters and numerals in monogram
Ask inside
FOR FREE COPY OF EYE PUZZLER BOOKLET AND FIND THE ANSWER
Wyeth
COLLYRIUM
KEEPS YOUR EYES CLEAR AND BRIGHT
SEE YOUR EYE SPECIALIST AT LEAST ONCE A YEAR
Wyeth
COLLYRIUM
NOW IN 2 FORMS

5

6

GALLERY

right, is for counter use with actual samples of the two products. Display, Forbes Lithograph Mfg. Co., Boston, Mass.

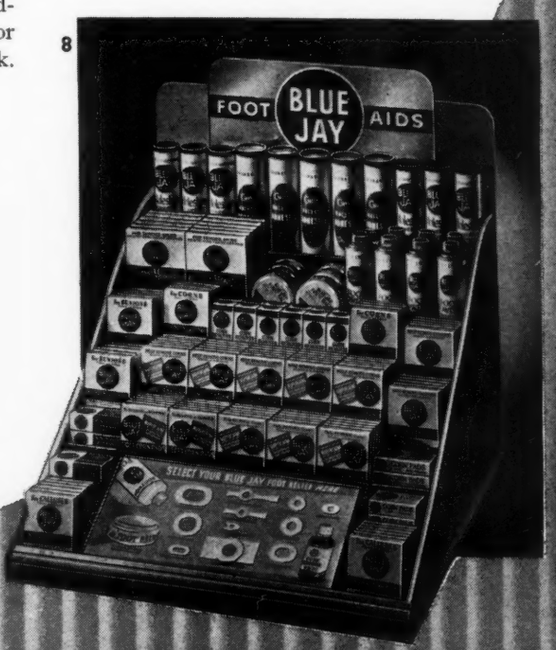
6 A paperboard counter display recently released for Double Danderine, an R. L. Watkins product, measures 9¾ in. by 14 in. The bottom of the display is scored in such a way that it folds back to make a solid three-sided base and a die-cut opening provides a space to insert the product.

7 A simply-erected paperboard display with two shelves is used to show the entire Ar-Ex dry skin line. Magneta, blue and white dominate the color scheme with touches of yellow, green and black. The two shelves are marked with product name so the retailer can make no mistake about the placing of the items to get the best display results. Display, Consolidated Lithographing Corp., Brooklyn, N. Y.

8 Plywood with metal shelves is used to make this effective display for Bauer & Black's Blue Jay foot aids. Although the entire piece is only 21 in. wide, it provides space enough to act as a complete department for these products including a generous storage compartment in the back. To aid the druggist in arranging the display, the name of the product to go on a particular shelf is stamped on the shelf. Display, Century Display Mfg. Co., Inc., Chicago, Ill.

9 One of the first postwar counter displays to appear in retail outlets to promote Pepsodent products is this one of bent plywood for the company's tooth brushes. The display is not bulky—taking less than 19 in. by 11 in. counter space—and shows to advantage a full half gross of merchandise. The base of the display is finished in a deep rose with the trade name appearing in white. The tray holding the brushes is also finished in white, thus acting as a suitable background for the vari-colored brush handles. Design, Raymond Loewy Associates, New York. Display, Harve Ferrill & Co., Chicago.

7



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Chicago show . . . for the industrial packaging field

Final preparations are being made for the first Industrial Packaging Exposition, to be staged by the Industrial Packaging Engineers Assn. of America at the Hotel Sherman, Chicago, on April 24, 25 and 26. The three-day event, which will be devoted exclusively to the problems, materials and techniques of industrial packaging, will include a number of basic packaging clinic sessions, supplemented by an extensive educational exhibit.

This marks the first time that a special exposition and conference covering this special phase of packaging has been held. More than 60 organizations serving the industrial packaging field are sponsoring booths at the exposition.

The educational exhibit, which will be under the direction of Dean B. Becker, consulting engineer, will cover such topics as the proper layout and planning of an up-to-date shipping department, new developments in modern packaging and current specifications. Illustrative photographs and charts, models of all kinds and related material will be slanted to assist the packaging engineer in streamlining his own shipping department.

Founded in October 1944, the Industrial Packaging Engineers Assn. of America now includes approximately 50 corporate members, 225 active members and 210 associate members.

Irving J. Stoller, Bradner Smith & Co., is general chairman of the exposition, with Charles H. Bishop, Angier Sales Corp., heading up the program committee and O. K. Hill, Better Packages, Inc., acting in a similar capacity on the exhibition committee.

All sessions of the packaging clinic program will be held in the Louis XVI room of the Hotel Sherman, one flight up from the exhibit floor. A condensed summary of the program follows:

Wednesday, April 24

9:00 A. M.—Registration, mezzanine floor.

10:00 A. M.—Business meeting of IPEAA group chairmen in exposition headquarters, Parlor O.

1:00 P. M.—Cleaning, Rust Preventives, Dehydrating Agents and Plastic Coatings. Chairman: George A. Daubert, Nox-Rust Chemical Corp. Subjects: "Correct Cleaning Insures Product Acceptance," B. B. Button, The Diversey Corp.; "Rust Preventives," F. E. Rolston, Dearborn Chemical Co.; "Postwar Applications for Dehydrating Agents," M. H. Baker, Davison Chemical Corp.; "Plastic Protective Coatings," Norman Peterson, Dow Chemical Co.

3:30 P. M.—Interior Packaging. Chairman: Eugene Preston, Sherman Paper Products Corp. Subjects: "Industrial Packaging Appeal," Fred Grede, International Harvester Co.; "Aircraft Packaging Problems," Gale C. Cunningham, North American Aviation, Inc. A panel discussion will follow.

Thursday, April 25

9:30 A. M.—Corrugated and Solid Fibre Boxes. Chairman: A. C. McGeath, American Box Board Co. Subjects: "Presenting the Program of the Railroads," A. L. Green, Freight Claims Division, Assn. of American Railroads; "Comments on the Activities of the Box Manufacturers," Walter J. Goettsch, Samuel M. Langston Co.; "The Problem from the Standpoint of the Shipper," Don L. Quinn, Don L. Quinn Co. At a luncheon meeting following this session, Paul Burbank, United Air Lines, is scheduled to speak on "Packaging for Air Cargo."

2:00 P. M.—Wirebound and Nailed Wooden Boxes and Crates. Chairman: Joseph H. Singer, Rathborne Hair & Ridgway Co. Subjects: "Wirebound Boxes," Louis A. Beale, Wirebound Box Mfgrs. Assn.; "Wooden Boxes for Industrial Use," Gunther Carlberg, Jr., National Wooden Box Assn. This talk will be followed by a panel discussion with George T. Walne, General Box Co.; Walter P. Newquist, Maxwell Bros., Inc., and Ernest A. Amundsen, Chicago Mill & Lumber Co., serving on the panel.

Friday, April 26

9:30 A. M.—Materials Handling, Palletizing, Loading and Shipping. Chairman, Paul O. Vogt, General Electric Co. Subjects: "Streamlining the Flow of Production," Arthur H. Dobler, Yale & Towne Mfg. Co.; "New Ideas on Palletizing," Harry Carpenter, International Harvester Co. This session will also include motion pictures and slides and a panel discussion on "Improved Methods of Loading and Shipping."

1:30 P. M.—New Developments in Packing and Packaging General Merchandise. Chairman: C. J. Carney, Jr., Montgomery Ward & Co. Subjects: "Organizing a Package Engineering Department," James G. Witte, Montgomery Ward & Co.; "Principles of Protective Packaging," R. E. Farney, Aldens Chicago Mail Order Co.; "Informative Tagging and Labeling," Walter Stern, Spiegel, Inc.; "Special Marking Requirements for Retail Distribution," W. H. Taylor, Sears, Roebuck & Co.

3:30 P. M.—Standards and Specifications. Chairman: S. H. Tompkins, Crescent Paper Co. This closing session relates closely to one of the fundamental purposes of the IPEAA—the eventual establishment of standards and specifications as a guide to all phases of industrial packing and packaging.

PACKAGING CONFERENCE and EXPOSITION

Atlantic City, April 2-5, 1946

It was with considerable trepidation that members of the Packaging Division of the American Management Association some months ago engaged the world's largest exhibition hall—Atlantic City's Convention Hall—for the 1946 Packaging Conference and Exposition.

The many advantages of the location were obvious, but some big questions presented themselves. Would the Exposition, previously accommodated by hotel ballrooms, be big enough to fill the four acres of floor space in this vast hall? Would packaging people make a trip to the seashore for the sole purpose of studying packaging?

The AMA's faith in the postwar stature of packaging was fully justified. Nearly 150 exhibitors filled Convention Hall with the biggest, most colorful and most informative Packaging Exposition yet; many visitors called it the most beautiful trade show ever held. Far from falling below the attendance of previous years in the more convenient metropolitan centers, registration came close to 9,000—equal to the biggest previous crowd in New York in 1943. Of these, some 1,400 attended the Conference sessions held during the first three days in the Ballroom of the hall.

The best criterion of success was the fact that on the final day of the meeting the Exhibitors' Advisory Committee voted to return to the same location next year, when the Exposition and Conference will be held from March 18 to 22. All but two of the 149 exhibitors immediately took up options for the same space next year; about one-fourth said they would take from 15 to 300% more space.

It was informally agreed that in 1948 the show would go to a Midwestern city, resuming the prewar custom of alternating between East and West. For 1947, however, it was felt that Atlantic City would still offer the best chance of adequate hotel accommodations as well as its unparalleled facilities for the meetings and exposition.

The Packaging Machinery Manufacturers Institute (a division of the Packaging Institute) held its regular semi-annual meeting and banquet just preceding the opening of the show. The only action made public was the unanimous decision that the machinery makers would participate in only one packaging exposition, it being their feeling that one such show per year afforded adequate opportunity to acquaint the packaging field with developments in the equipment line, and that the AMA-sponsored gathering had definitely demonstrated its power to attract the packaging public.

This year's show marked "the end of the beginning" of reconversion in the packaging field. The Exposition was outstanding in the wealth of information it conveyed on new products and trends in packaging. Even the machinery makers, who had not been expected to have much to show, had in some cases brand-new equipment, which attracted throngs of visitors. Two makers exhibited new automatic machines for applying cellulose sealing bands to bottles—a long-sought achievement. One manufacturer showed no less than three new machines of unrelated types.

A machine for automatically tight-wrapping irregularly shaped objects in Pliofilm attracted much attention. An electronic heat-sealer was among several types of new sealing equipment shown. There were high-speed automatic cartoning and bag-opening machines in operation. Several manufacturers demonstrated new types of materials-handling equipment developed out of the war. There were a number of new testing devices.

On the materials side, the converters' booths were impressive with a full array of transparent and decorative consumer packaging materials such as had not been seen since before the war. Prepackaging of produce and flowers received considerable emphasis, and several booths had self-service refrigeration equipment in operation filled with typical prepackaged meats, produce and delicatessen items. Protective packaging and shipping materials, which became so important during the war, continued to receive attention—with the emphasis this time on their adaption to civilian products.

The Conference sessions, held in the vast Ballroom conveniently located just off the Exposition floor, were exceptionally well attended, some sessions drawing as many as 1,000. The program, based on a poll of members of AMA as to the subjects in which they were most interested, showed more than the usual concern with the functional and technical aspects of packaging.

The following condensations contain the substance of all papers delivered at the six conference sessions:

TUESDAY MORNING

Chairman, ALVIN E. DODD, *President, American Management Assn.*

The Outlook on Critical Packaging Materials—EDWARD J. DETGEN, *Sales Manager, Building Materials Division, Owens-Corning Fiber-Glass Corp., Toledo, Ohio.*

A year ago when we were facing our most difficult container problems resulting from the military demand caused by the "bulge" we were looking forward to a very uncomfortable packaging period. A similar situation exists today. Be-

cause of materials shortages and, in some instances, insufficient fabricating capacity, there is little possibility that demand and supply can be matched, said Mr. Detgen.

There is, however, an important distinction between the situation in 1946 in comparison with 1945—an increased supply of containers for civilian purposes. In practically every instance the 1946 supply will at least equal the 1945 production. With an accompanying reduction in military demand, the amount available for civilians automatically is increased.

The supply of fibre shipping containers will about equal the 1945 production if the recent inroads on containerboard inventories can be replaced. Although a greater portion of this production will be available for civilian purposes than was the case in 1945, there is no possibility of this industry meeting its requirements as presently estimated.

This shortage of containerboard is due to a number of factors including price differentials, shortage of labor in the woods, bad weather, diversion of logs to lumber, and similar operating problems. However, even if all these difficulties were overcome, it is doubtful if the industry could increase its production by more than 5% since it is running at about 95% of total capacity. In this connection, it should be understood that we are referring only to containerboard capacity—not to box fabricating facilities, which are ample.

One other factor should be considered in analyzing the fibre container situation, and that is the sharp drop in the production of V-Board and similar heavy types of fibre containers required last year by the military. This generally means that we are getting more square footage of containerboard than we did last year.

Some questions have been raised as to what part Swedish pulp, which is now available to us, is playing in the fibre shipping container picture. The quick answer is, practically none. Containerboard producers have integrated operations and thus have relied practically entirely on their own pulp production; under these conditions the economics are such that they cannot compete successfully with other users of Swedish pulp who can pay higher prices.

Folding boxboard output is continuing to climb and production in 1946 will exceed that of any previous year. But here again, despite this tremendous supply, the situation is far from satisfactory. The same is true of multiwall paper bags.

The most serious packaging problem we face today is due to the tin situation. The tinplate shortage which results is one that hits all of us directly because it involves the major portion of the food pack and many other consumer products. No one expected that we would be facing such a serious problem seven months after V-J Day. Latest Government figures indicate that the stocks on hand as of January 1, 1946, were in the neighborhood of 92,000 long tons and that the new 1946 supply will be approximately 42,000 long tons, making a total supply of 134,000 long tons. With restricted consumption estimated at approximately 65,000 tons, the stockpile on January 1, 1947, will have dropped to about 69,000 tons, which includes Government reserves and in-process and working stocks.

The CPA, has retained controls on the use of tin for metal cans and other purposes and no new uses for tin for packaging purposes will be permitted this year at least. That means that only seasonal foods and the few other items which were permitted during the war will be permitted the use of tin cans. Despite the great losses in production in steel due to the recent strike, it is expected that the can industry will receive at least as much plate in 1946 as it did in 1945. With regard to tinless cans, you are all probably familiar with the fact that the CPA reinstated controls over the use of blackplate which generally speaking, are more liberal in comparison with the first six months of 1945, but more restricted in comparison with the latter part of the year when the regulations on cans were relaxed.

Other types of steel packaging and containers are also affected by the steel situation and it is doubtful that they will fare as well as cans during the period of shortage because of the top priority the Government has assigned to tinplate. While the total production of sheet and strip steel will be as great, or possibly greater, in 1946 than it was last year, the tremendous demand from the consumer durable-goods industry and the automobile industry might cause the supply for such packaging materials as steel drums, steel strapping, non-food closures and other tin mill products to drop below the 1945 level. Another development which bears watching is the pricing of steel products by the OPA for any unfavorable price differentials would probably channel steel to other products.

Glass containers are still in short supply despite the fact that the industry is increasing its capacity and the cumulative effect of the standardization order is making it possible to produce a larger supply of bottles on existing facilities. The glass shortage is due to the restrictions on metal cans, the increased demand for regular glass-packed products and the pressure of new products for glass packaging. While the industry is expected to produce about 5% more packages in 1946 than they did in 1945, there is no basis for expecting the situation to be brought into balance this year. The CPA has retained the standardization order, L-103, to maintain glass container production at the maximum and will continue this control until the situation improves. You are all familiar with the fact that this standardization order permitted the production of 25% more bottles with the same facilities than could have been supplied otherwise.

Collapsible tubes follow this same general pattern of short supply, but here again there are considerably more civilian packages than last year. The Department of Commerce estimates that a little less than six million gross will be produced in 1946, which compares favorably with the yearly average in 1940–42 of a little less than four million gross. The actual amount which civilians received in 1945 has been estimated at around four million gross so that there should be approximately two million more of these packages available in 1946. No one knows what the requirements for collapsible tubes are, but it has been conservatively estimated that packers could use eight million gross in 1946. This collapsible tube situation is a direct result of the lead shortage and the outlook for lead for 1946, and even 1947, is far from bright.

With all the publicity on the housing situation and the attendant discussion of the lumber supply, there is probably little need to go into the wooden container outlook in any great detail. However, perhaps we should summarize the situation from the container angle by saying that CPA has estimated requirements at 6,500,000,000 board feet for 1946 and that this amount will probably be available if total lumber production reaches 30,000,000,000 board feet. Lower than seasonal outputs in January and February have caused some predictions that this production goal will not be met. However, there are good reasons for believing that this goal can be achieved.

Our war problems with box-grade veneer and attendant OPA difficulties continue to divert veneer production from

box makers to other users. Some of you may be familiar with the recent well-intentioned, but misguided action of OPA which has created a situation where practically no veneer is available to box makers.

No review of this type would be complete without discussing the textile problem. You are probably acquainted with the fact that the textile bag industry is one of the largest consumers of textiles in the country and that a very large volume is used for overseas as well as domestic shipments of foods. The materials required are burlap and cotton. While there will probably be sufficient supplies of burlap, the cotton situation is far from good. Latest estimates indicate that the textile bag industry will receive only about 75% of its cotton requirements—and this despite the fact that steps are being taken to substitute burlap for cotton.

What is CPA Doing for Packagers?—CHARLES LEWIS, *Head of Container Branch, Civilian Production Administration.*

During the question-and-answer period following the Tuesday morning session, the chairman and Mr. Detgen called on Charles Lewis, head of CPA's Container Branch, to tell what the postwar successor to WPB is doing in regard to the packaging supply situation.

Many people are under the impression, said Mr. Lewis, that the container distribution problem went out with the war. That is not true. The problem is as accute if not more so than during the war years.

CPA is operating with a small staff who lived with the war problems and is now helping industry with civilian packaging problems. CPA has all the powers of WPB and if need or urgency occurs is the instrument to straighten out production bottlenecks.

CPA will not grant allocations for expansion or streamlining, but in cases where worn-out machinery involves production facilities below the minimum economic rate, the Container Branch is set up to give assistance. Application forms for assistance on such production bottlenecks may be obtained at any Post Office by asking for blanks designated as CPA-541A. Mr. Lewis urged those attending the conference to call on CPA and to keep the Container Branch fully aware of their problems.

The Top Management Approach to Packaging—R. D. ELWELL, *McKinsey & Co., New York City.*

In spite of the striking influence packaging has in the field of merchandising, according to Mr. Elwell, major executives have yet to accord it the type of thinking it deserves. They recognize its importance, but they have not coordinated it properly with their over-all company goals and marketing plans.

For packaging has grown to the point where it can no longer be considered an incidental factor in sales promotion. It has walked right into the executive offices.

Today, packaging has become a top-management problem. It has demonstrated its ability to increase sales. It has educated customers about products. It has protected the quality of your product until it reaches your customer and has thus maintained your company's reputation.

These are true top-management concerns. They are major factors in determining the results shown on your monthly profit and loss statement, but are even more significant in their cumulative effect on the future course of your business.

Today's market is replete with illustrations of the sales importance of packaging from a top-management viewpoint, Mr. Elwell stated. The supermarket is a notable example with the trend to self-service and mass display. Packaging has become the vehicle for providing information about your product to the customer. Due to the contribution of the Federal Food, Drug, and Cosmetic Act, customers read your statements and believe them. Customers want good packaging. They want it to protect the merchandise, to tell the story behind the product and guarantee performance backed by your trademark.

Packaging is highly competitive. Often, as in the cosmetic field, the package virtually sells the merchandise.

If packaging is a top-management problem, then it must be approached on the same factual basis and with the same long-range viewpoint given to other major problems.

Too often packaging problems are approached by putting the designer to work before specific objectives have been factually determined. It is a common experience for a packaging designer to be handed an assignment in which his instructions are: "We want a real knockout package—the best in the industry." Here the designer has been given an incomplete assignment without the factual tools to do the job. Unless that package designer has the answer to basic factual questions, he must spend his time doing the job top management should have had done for him.

The factual approach depends on analysis—analysis which should be *initiated* by top management before the designer is given the assignment. The analysis should concern itself with basic questions about the product, the market and competitive packaging.

Analysis answers questions such as:

1. What are the physical characteristics of the product that determine the form of container—bottle, can, set-up box, folding carton, or bag, etc.?
2. What is the product used for?
3. Does it protect the product?
4. Is it one of a family of products?
5. How is it manufactured?
6. How is it presently packaged, if the problem is redesign?
7. What is the margin available for packaging expense?

Such facts, said Mr. Elwell, may seem elemental, but unless such information is available and analyzed, the final result is likely to be faulty. Making the decisions based on such study is the concern of top management.

Market analysis should answer such questions as:

Who are the customers? Where do they live? What income groups are they in? Who buys the product? Are there any special buying habits? Shoes, for instance, are tried on. The woman shopper wants to feel blankets, therefore the package should not be sealed. Pinching and squeezing of foodstuffs has long been a headache to grocers. How is the product displayed? There is a great difference between mass display in a supermarket and the presentation of high-priced jewelry. Analysis should also indicate distribution channels through which the product reaches its market.

Knowledge of what the competition is doing should also serve as a base for improvements. Competitive products must be carefully considered with an eye to how they will appear on the shelves next to your competitors.

Armed with such basic information, top management can

set up certain objectives for the designer covering all aspects of protection, convenience, eye appeal and display value, economy and informative data.

In addition, there are broader marketing goals to be achieved such as grading for quality, pricing, playing up company name or brand name. These are policy questions of packaging that only top management can determine.

Top management, however, should not spend its time doing any part of the detailed job. That belongs to the technicians, but top management must chart the course, direct and check results to see that the packaging is properly geared into the profit program.

Now is the time when every profit-minded management is making a thorough overhaul of its packaging program. These companies are preparing for the return of full competitive selling, recognizing that packaging is one way to maintain and improve competitive position in an economy of tremendously expanded productive capacity.

The war was responsible for developing many new materials and new methods. But it also formed a dam which prevented them from becoming readily available to peacetime industry. The flood gates of that dam are just beginning to open and every forward-looking company will take a careful look at how these new materials can be put to work for them.

Application of new ideas, materials and processes to your product will require experimentation, development and, most significant of all—time. And time is hard to buy for money—it must be bought with vision and careful planning.

If, in your packaging overhaul, you will employ the top-management approach to the job, it will pay off directly in profits. But there will be an important by-product. This approach will tone up every other phase of the business.

TUESDAY AFTERNOON

Chairman, F. S. LEINBACH, *Assistant to the General Manager, Riegel Paper Corp., New York.*

THE PEACETIME APPLICATION OF WARTIME PACKAGING DEVELOPMENTS—*Panel Session.*

Fragile Articles—R. G. ANDERSON, *Packaging Methods Supervisor, Sperry Gyroscope Co., Great Neck, N. Y.*

Sperry, Mr. Anderson said, like many other manufacturers of war materials, had to sacrifice delivery to commercial accounts during the war, and now faces the job of regaining the faith of these commercial customers. To carry on our prestige in instruments and spares, we have started a program for commercial packaging. This packaging will incorporate many principles we learned during wartime. However, stainless steel, brass, bronze, aluminum and non-metallic materials will not need the same protection that must be given to materials like carbon steel, cast iron and magnesium. In our program we think painted or plated surfaces offer sufficient protection for the average commercial shipment.

All our spare parts will be reviewed and commercial packaging specifications will be written. They will show what method of protection is needed, the unit quantity required and the unit package.

During the war, the field service department advised us of all their findings relative to packing, whether good or bad; this practice will continue during peacetime. A closer contact with the engineering department enables us to advise them that minor changes in design will result in a cheaper way of holding units during shipment.

Our biggest difficulty in packaging is the procurement of material in the quantity we require. To overcome this we have developed a group of standard size cartons. Our cushioning is done either with single face corrugated, cellulose wadding or curled hair. All the cushioning material comes to us in bulk lots, and we design jigs or forms which help us to form them to their respective size and shape in production quantity. For a large quantity we have the curled hair moulded to form, such as the ones used in our directional gyro pack.

During the war, the Society of Automotive Engineers, Aeronautical Division, formed packaging committees to coordinate government specifications into ones adaptable to each manufacturer's need. At the present time a new committee, known as S-6A on the Preservation and Packaging of Aeronautical Parts and Equipment has been formed to handle the postwar needs in packaging for the aircraft industry.

There are some manufacturers, Mr. Anderson declared, who have discontinued process packaging from their peacetime program because they do not wish to carry on the elaborate system which was used during the war. No one expects them to. Their products will never be left out in the elements or landed on beach heads. There are well-protected warehouses and storerooms for their commodity during peacetime, but ever present is that insidious agent called corrosion. A manufacturer's indifference or neglect to realize that he must cope with corrosion will ultimately show up in his sales in a manner he will regret.

Foils and Laminations—C. F. MANNING, *Assistant Vice President, Reynolds Metals Co., Richmond, Va.*

Some months ago Charlie Southwick reminded us through the pages of MODERN PACKAGING that we should have a clear understanding of the names of materials we use in packaging, and he set up some very excellent definitions. With his timely prod, said Mr. Manning, I shall begin this discussion by telling you what I am talking about when I refer to foil.

There are various kinds of foil, such as copper foil, zinc foil and iron foil. Some are produced by rolling and some by other methods, but we are interested here only in foils used in packaging, which are tin foil, lead foil, composition foil and aluminum foil.

Aluminum foil is commercially pure aluminum rolled thin, and during recent years it has largely replaced tin foil, lead foil and composition foil. Now that aluminum foil is available again, it will be used for packaging almost exclusively.

Aluminum foil for packaging is supplied in sheets or rolls in various gauges from 0.00035 in. up to 0.005 and if need be, even heavier. A pound of aluminum rolled to 0.00035 has a yield of approximately 29,200 sq. in. and a pound of aluminum rolled to 0.005 yields approximately 2,050 sq. in. There has heretofore been a tendency to use the lightest possible gauge; today there is a definite trend in the opposite direction.

Government standards and performance tests forced us to learn how to coat foil with tricky heat-sealing plastics. Now foil can be successfully and commercially coated with many types of plastics, which are used to provide the means of heat-sealing, to color the metal or to protect it from the few acids which might set up corrosion.

Two major problems kept wax from being widely used with foil. First, the seal seam strength was not considered adequate, and it would under certain conditions block badly. Under pressure of war needs a really sensational yet simple sheet was developed which completely overcomes blocking

and provides a heat-seal seam of unbelievable strength by impregnating the wax with paper fibres.

Today foil is available not only in its natural state in various gauges, but also laminated to all kinds and weights of paper, paperboard and certain films. Of unusual interest is the fact that a practical method has been perfected to laminate aluminum foil to both sides of paper or paperboard. The answer has been found in certain plastic materials which can be used as the binding agent.

The foil industry is working closely with the fabricators of all forms of packaging materials. Package machinery manufacturers are making a very major contribution by providing the means of putting all this into actual practice. Designers have now mastered the brilliance of foil and know how to control it. They skillfully focus small areas to attract the eye and use them effectively to give the package high quality appearance. Fast-drying inks have been perfected that really stick, and high speed printing presses now print foil at extremely high speeds. You can, therefore now have foil labels or protective packages with all the glamour of full-color reproductions.

Moisture Protection—DR. CHARLES E. WARING, *Director of Research, Davison Chemical Corp., Baltimore, Md.**

In prewar packaging techniques, Dr. Waring said, packaging had two functions to perform. It had to protect the article to be sold and it had to add sales appeal to the product itself. In many instances where the protection problem was not a difficult one, this function of merchandising and sales appeal became the primary criterion of good packaging.

During the war, many new protective techniques, such as dehydrated packaging, were developed. Their use is an old story to those who followed wartime packaging developments, but it is not widely realized that these same techniques in modified form are readily applicable to the protection of pharmaceuticals, textiles and foods, as well as metal parts and mechanical and electrical devices.

Most of these great advances in protection were accomplished by materials and methods which in themselves had no eye appeal. A problem now facing the packaging industry is to combine these highly efficient protective techniques with what had previously been learned in packaging from the merchandising point of view.

Of the industries that already have made outstanding progress in this task, the pharmaceutical business probably heads the list. Gelatin capsules tend to absorb moisture from humid air and become sticky so that they cannot be separated. A dehydrated package with a moisture-vapor barrier and a desiccant has solved the problem of shipment of gelatin capsules in satisfactory condition. Penicillin loses its potency if it is exposed to relative humidities greater than 50%. It is usually packaged in glass tubes, which provide an effective moisture barrier. However, the addition of a small desiccant capsule has proved of real benefit in providing additional protection against moisture infiltration and extending the shelf life of the package. Liver extract also undergoes spoilage if the moisture content becomes too great and in this particular application, finely divided silica gel is incorporated directly into the extract. Effervescent saline powders lose their "fizzy" properties if they absorb moisture from the air. The life of these products can be effectively prolonged by the use of a desiccant in a moisture-vaporproof envelope. Since it is not desirable to add the desiccant powder directly to this formulation, it has been found technically feasible to use an envelope with two separate compartments for the protection of this type of product.

Much thought has been given to the adaptation of these techniques to the food industry. In the case of some food products, improved moisture-vapor barriers alone can make great contributions. An outstanding example of this is a dried yeast product which has recently been introduced to the trade. This product utilizes a highly efficient foil package dressed up with very pleasing color combinations. The item sells for 3 cents, so you can judge that the cost of the packaging is not excessive.

QUESTION: Does the addition of a desiccant to a drug product (as in the case of the liver extract) constitute adulteration?

ANSWER: Not if the addition is under 1%. Silica gel is pure and may be taken internally; some doctors prescribe it.

Metal Articles—W. T. BLACK, *Packaging Engineer, Western Products, Inc., Newark, Ohio.*

The successful preservation and packaging of metal parts and assemblies for shipping and storage of military supplies during World War II provides a sound basis for the adoption, by industry, of the new methods developed, Mr. Black declared. He reviewed requirements of the three widely used war methods and their variations—Methods I, I-A and II—and pointed out that all three must have their place in the packaging of metal parts.

Method I-A, he said, is one of the most important packaging techniques to be developed during the war. It is reasonably certain that metal parts such as bearings, filters, gears, oil pan assemblies, clutch pressure plates, as well as any item in the machine tool and electrical field, will be packed by this method to great advantage, particularly where parts are packed for relatively long-term storage. He emphasized that under this method waterproof wrappings are used which are not necessarily moisture-vaporproof.

The effectiveness of Method II—the so-called dehydrated package—rests, he said, equally on four interdependent factors: (1) the volume of enclosed air space; (2) the area of the surface wrapper enclosing the space; (3) the moisture-vapor transmission rate of the enclosing barrier, and (4) the quantity of desiccant included in the package. He mentioned five principal variations of the Method II pack—the floating bag, the container-barrier-container, the container overwrap, the cushioned bag and the rigid metal container.

The application of Method II dehydrated packaging, Mr. Black asserted, should be seriously considered for export shipments and long-term storage, since it offers positive protection to complicated parts and assemblies. A partial list of equipment which may be packed by this method includes electric motors, generators, sewing machines, cash registers, business machines, sporting arms, radio and electronic equipment, complete engines (both aircraft and automotive), optical instruments, precision timepieces and typewriters.

Before the war, he said, manufacturers shipping such items for export reported a high percentage of replacement parts required due to corrosion damage. The experience we have gained from the development of these new methods of packaging definitely proves that this condition can be minimized—an advantage that certainly will be attractive to the manufacturers of equipment of all types. Most concerns are aware of the fact that the acceptance of a product is dependent upon the condition in which it is received by the consumer, and

* See further Dr. Waring's series of three articles, MODERN PACKAGING January, February and March, 1946.

they know that proper handling in their packaging rooms can reduce the replacement parts which many manufacturers find necessary to include in their shipments.

Great progress has been made in the development of lubricants, preservative compounds, waterproof, moisture-vaporproof and other packaging materials. During the war, of course, no thought was given to the attractiveness of the countless packages which have been designed; this is an additional consideration which must be given complete study for peacetime application.

Pharmaceuticals—H. E. NACK, *Packaging Specifications Dept., Sharp & Dohme, Inc., Philadelphia.*

Regardless of the fact that most war packages were engineered to function under extraordinary conditions and that there are not too many war materials adaptable to peacetime merchandising, nevertheless the end result has been a greater appreciation of what constitutes adequate packaging, and the importance of practical and scientific package engineering. From the lessons learned during the war has come a great enthusiasm to turn out packages of greater functional value and more pleasing appearance. It may be, that, by reason of this enthusiasm many of the materials developed or improved will be utilized when packaging men have time to devote to their study and application to their own peculiar problems.

Glass, said Mr. Nack, naturally remains the most popular medium for drug packaging because we must first consider product stability. The standard light-weight type adopted during the war has proved perfectly satisfactory. So-called economy lines will be retained for competitive items. Specialty products, however, which necessity in some cases forced into standard bottles, will be changed to private molds, regardless of slightly higher costs and possible loss of efficiency.

We have been without good closures so long that we can consider a return to closures of prewar quality in the category of a new packaging material.

While lead, tin-lined lead, aluminum and magnesium tubes may be used in other industries, high grade pharmaceutical ointments will return to pure tin tubes when available. The present 7½% tin-lead tubes are a poor substitute. Interior coatings have been costly and unsatisfactory due to the high percentage of discards. Aluminum and/or magnesium collapsible tubes may be considered as a future possibility, when fracture-proof linings have been further developed and tested.

The fibreboard cans which you may still see on the druggist's shelves containing foot, surgical, dusting powders and many other products are there from necessity rather than choice. The value of lighter weight is lost when one considers cost, packaging difficulties and the prestige of metal.

Fibreboard cannisters, properly lined in sizes up to 5 gallon capacities have proven a satisfactory substitute for bulk packages of dry products, however, regardless of the fact that they may be shipped without additional protection, cost comparison favors a return to tin containers. Fibreboard drums in the larger sizes however have become a necessity for dry products, by reason of the development and use of chemical, thermoplastic and fabricated drum linings, the reutility has been increased enormously.

The extruded aluminum container—light weight, unbreakable, inexpensive and capable of being well sealed—is an item which should be given consideration. It is of particular interest in packaging tablets, pills and capsules for export where weight plays such an important part. When available with fracture-proof linings, it can cover a wider range of products.

The many newly developed films and combinations, providing high moisture protection, will give us a wider range of selection and make possible the use of these materials for many products which are now marketed in other package forms. The development of improved equipment and methods for better sealing is necessary, particularly in the case of foils, before we can accept and use it to the fullest extent.

Plastic containers are destined to appear gradually on favored products which justify deluxe packaging and where cost will not be the main consideration. Their extended use will be in direct ratio to the cost differential, which may be expected to come down. Plastic bottles produced by blowing methods are an interesting possibility for future consideration.

The speedy adoption of most of these materials will be largely in the hands of our suppliers. It is their opportunity to create, test and suggest possible uses, as the packaging man who may be responsible for possibly 500 or 1,000 products or sizes, is still reconverting, making changes to tie in with proposed higher speed equipment and believe it or not working on substitutes for hard to get material.

We must not forget that competition, in some lines higher costs due to wage increases and other factors make it necessary to plan on higher speed production lines; therefore machinery needs will delay conversion into some of the newer materials for a long time.

Enthusiastic acceptance of some of the new developments should not lead us into the pitfalls of overpackaging our products. The required shelf life, nature of the product, method of transportation, and how and where it is to be marketed should be first considerations.

We must also realize that the utilization of new packaging materials should be approached cautiously. In many cases there must be months of stability tests, cost comparisons, study of production requirements, new equipment and sales analysis before proceeding.

WEDNESDAY MORNING

Chairman, W. R. HUMMEL, *Merchandise Methods & Results, Western Electric Co., Inc., New York, N. Y.*

Packaging for Air Cargo Shipment—PAUL E. BURBANK, *Manager of Cargo Sales, United Air Lines Corp., Chicago, Ill.*

There is no business in the United States from whose doors main products or by-products cannot go by air transportation at an economic advantage, according to Mr. Burbank. The era of the airplane is linking the world in a way that no other instrument of transportation can and this age throws a challenge to American industry to make the airplane serve for passengers and cargo—a challenge on how to make the best use of it.

This first week in April is symbolic in the history of transportation, he said. The first pony express, forerunner of transcontinental transportation, was instituted on April 3, 1860.

To envision the possibilities of air cargo, it is necessary to know what has happened to the airplane as the result of the war.

First, we have learned to build for greater speed which is bringing markets closer together. Planes now cross the country in 9 hrs. and 45 min. Instruments with wings fly from New York to Paris in 15 hours. New planes are being

planned with cruising speeds of 400 miles per hour. No jet planes have yet been used commercially, but the first ones with cruising speed of 400 miles or faster for cargo are expected to be in operation in 1947 on a 7-hour transcontinental schedule. Planes currently in operation can carry 18,000 lbs. of cargo. Indications are that future planes will carry 38,000 lbs. of cargo across the country in an amazing 6 hrs. and 3 min.

Second factor is reliability. There are still weather interruptions to face, but this is only during an interim period. With radar development, reliability of service will exceed even the dreams of a few years ago. When new landing equipment is installed, it is expected that 100% flights can be completed with a maximum allowance of only 2% for lateness.

Third factor is frequency. The tremendous production of planes will greatly increase frequency of schedules, which even now is considerable: every 24 hours 50 round trips between New York and the West Coast; 52 round trips between Boston and New York; 51 round trips between Chicago and New York.

Some industries are more adaptable to air cargo than others, Mr. Burbank stated. It is economically unsound not to ship machine replacement parts by air. Medicinal supplies by air have saved thousands of lives. Right now, life saving drugs are being flown to Honolulu after the tidal waves. Antitoxins were flown to the Coast recently to stop the spread of an epidemic. Many of these drugs are fugitive; local druggists do not have the facilities for handling them or for proper refrigeration.

Air transportation will make it possible for stores all over the country to obtain stocks of high-fashion clothing as soon as it appears in New York and Hollywood. Dresses are now being transported by air on hangers and enclosed in transparent bags, so that the cost of pressing is eliminated for the retailer on arrival.

Air transportation makes it possible to ship tree- and vine-ripened perishables. Other valuable fields for air transportation include radio recordings, graphic arts products, x-ray tubes, sea foods, etc.

All of these products require packaging. All would be simple if the airlines could specify only the lighter weight and space-saving packaging requirements for air cargo. Shipments for air are more carefully handled, because they can't be dropped on the floor of a plane. They receive no violent stops, as they often do in surface transportation. But air shipments cannot be packed only for plane transportation, because usually in order to get to the airport and from the airport to their destination they must move also in surface transportation.

Mr. Burbank illustrated his talk with samples of newest types of air cargo boxes for shipment of women's ready-to-wear, fish, perishables, flowers. He stressed the importance of a second phase of air cargo packaging which he termed the "design element."

The much-publicized Flowers Air Delivery were the outstanding example of this to date, but he urged his listeners to capitalize on the merchandising aspects of air transportation through package design. He mentioned hat boxes printed in red, white and blue—the colors that signify air delivery—showing at a glance the fashion timeliness of the of the merchandise enclosed. Use air transportation to sell merchandise, he said. It's a challenge to the packaging industry to find the best way to use it to deliver more merchandise in better condition.

Modern Materials Handling and Warehousing Techniques—CURTIS H. BARKER, JR., *Director of Research, Pallet Sales Co., New York, N. Y.*

Never before has any one function of business said Mr. Barker, received such sudden, widespread consideration as that which is today being focused on the handling of materials. By far the most significant fact is that everyone is starting out with an earnest endeavor to take advantage of the unit load wherever possible. A unit load may be 4,000 lbs. of high-finish strip metal in a corrugated carbon, steel-strapped to a couple of runners, a wooden or metal container so constructed that it can be picked up and moved by a variety of equipment or any one of dozens of types of palletized unit loads combining approximately 20 to 100 smaller units into one mass for handling.

In the case of the unit load of metal strip, for example, usually 400 to 500 lbs. are boxed for which the consumer pays 25 cents per 100 lbs. It costs the manufacturer of the metal more than that if he can obtain the boxes or the lumber. Why not give consideration to a pack of no greater cost for ten times the amount of material.

Just recently three of the largest automobile manufacturers have instructed practically all of their suppliers to make shipments in palletized unit loads or unit loads depending on the product. This means that all of their assembly plants will be receiving unit loads delivered direct to assembly lines, some involving tiers of tray separators strapped to pallets. Unit loads will reduce packing costs and revolutionize a large percentage of the packaging requirements. The very fact that these extensive programs are under way before favorable rates for the movement of pallets by rail are established indicates that a saving in packing costs is to be realized.

The paper industry, which was one of the first to make shipments on skids, is making plans to modernize its methods by shipping on pallets. The canners, particularly on the West Coast, are continuing to make shipments of palletized unit loads largely over the highway, a practice started during the war. Large numbers of practically every conceivable industry are unit-loading for their own handling and including in their plans the use of unit loads to distribution points and large customers.

The main deterrent to greater progress in unit load transportation is the unwillingness of the Assn. of American Railroads and the I.C.C. to treat pallets as dunnage instead of as containers. The pallets should be subject to the free dunnage allowance, and then take a special tariff rather than that of the commodity which they bear. The return of pallets should also be covered by a special rate. Frankly, the railroads admit the reductions in damage claims, faster loading and unloading, the economies of handling and storing their own supplies, particularly those roads that have cooperated with special rates within a particular state. They are, however, afraid the swing to pallets will be so rapid and so great their earned income will be seriously affected if rates are reduced. All bold steps taken by this country in the past have not worked out that way and we should have enough confidence in the ingenuity of American industries to make just as large profits by greater volume even with the squeeze between cost and selling price. I would like to see every company that would like to ship in unit loads, but can't because of these unfair rates, exert pressure on the railroads serving them or on the Association.

Many railroad executives have stated that they will be ready to handle LCL freight in unit loads when the demand arises. All we require is a fair rate so that the growth

carload movements will not be impeded; then LCL movements in unit loads will come along in due time virtually of their own volition. Many railroads have spent huge sums of money in equipping permanent dunnage cars for specific uses by their shippers, but this has been confined to probably the certain big companies under pressure of competition. The highway truckers are cooperating in unit load movements and will offer plenty of competition.

One railroad executive writes: "Will the railroads be able to use pallets in less than carload business? And when? By using unit loads we can reduce our claim payments, but we all must make this step at one time."

Necessity has often proved to be the mother of invention. Instead of waiting for the railroads to act favorably, why not ship products on a light weight, low cost pallet that may be classed as expendable or use a slightly heavier pallet, yet economical in cost where product weight, dimensions, weight distribution or necessary storage prior to shipment requires such a pallet, in which case the pallet may be used for more than one trip. Inadequate supply of basic materials is the only reason my company has not been able to launch these new lines.

I know you want to know more about the building up of stable unit loads. Today we know of five general types: (1) a box or protected piece of equipment mounted on runners; (2) steel strapped unit loads, which may involve a number of framed separators to keep parts in place, or simply the securing of a number of containers or flat material to the pallet; (3) glued unit loads which can only be applied to certain types of containers, such as some cartoned goods, wood boxes and some bagged goods; (4) loose palletized loads confined to containers containing products such as canned goods that permit overhang on pallets to help obtain tight stowage without breakage; (5) box pallets made by stapling narrow cored flaps of collapsible corrugated tube to the pallet and strapping corrugated cap to both tube and pallet. An innumerable number of small odd-shaped packages can be placed in the box pallet.

Do Fibre Box Shipping Practices Need Modification?— O. B. KING, *Fourdrinier Kraft Institute, New York, N. Y.*

During the war it was so important that export supplies reach our Armed Forces at any cost that special specifications far in excess of domestic requirements were set up to meet the abnormal shipping conditions. This was the familiar V-box program, said Mr. King.

This enormous movement of strong fibre out of the domestic channels created a severe shortage of adequate raw materials for domestic use.

It is our feeling that the requirements for a domestic container should be based on more economical considerations than the requirements of a wartime container.

It is conceivable that we could reduce loss and damage claims to a very low figure by substantial over-packaging but the additional cost of the much heavier containers plus the added weight cost due to the heavier containers could very possibly greatly exceed the reduction in loss and damage claims and it would cost the consumer, who in the end finally pays all the bills, more money for his packaged goods.

A survey of the freight loss and damage expenditures for claims published by the Assn. of American Railroads indicates that this expense to the railroads has increased slowly from $15,000,000 in 1933 to $21,000,000 in 1940 and jumped during the war years to $60,000,000 in 1944.

During the prewar years when the specifications outlined in Rule 41 contained the same Mullen test requirements as the present Rule, fibre containers did a very creditable job. It has only been during the war years from 1941 to the present that their performance can be questioned. During this period there has been a tremendous shortage of pulp, containerboard, and containers which have made it necessary for shippers to use a great many substandard and second-hand boxes. There have also been many other factors involved in this tremendous increase in loss and damage claims. The greatest of these factors has been the enormously increased volume which the railroads have been called upon to handle. Other factors have been the heavy loading of cars, rough handling by railroads, etc.

Without further analysis this presents a very unsatisfactory picture. During the same period, however, the tons hauled by the railroads have increased from 700,000,000 tons in 1933 to approximately 1,500,000,000 tons in 1944.

Our studies indicate that shipping containers *could have been* to some extent instrumental in the increased loss and damage claims to the railroads. We have not, however, been able to find conclusive evidence that fibre containers that meet the present Rule 41 have contributed to these losses. We believe it has been containers that did not meet the present Rule.

We do not take the position, however, that Rule 41 is or is not adequate but merely state that we do not have conclusive evidence that a change is necessary. A study of container failures and the causes thereof must be made before an intelligent conclusion can be reached.

Several fibre container testing programs have been undertaken to determine the carrying ability of various fibre containers and to accumulate scientific information from which to write a really practical Rule 41 if it is found necessary to do so.

The Fourdriner Kraft Board Institute composed of manufacturers of 80% of all fourdriner kraft linerboard, has employed the Institute of Paper Chemistry, Appleton, Wis. to carry on scientific studies and make practical tests on liner board, combined board and fibre containers. The first phases of these tests have been underway for more than a year. More than $100,000 has been spent on this program. The Institute of Paper Chemistry has built a new container testing laboratory at a cost of more than $150,000 to carry on this testing. The program is moving forward on a budget of $10,000 per month. The Shipping Container Institute is starting a testing program and are budgeting $65,000 for this year's testing. The glass container industry has started elaborate testing programs involving the packaging of their products. Individual container manufacturers are subscribing to a program carried out by commercial testing laboratories.

With all of these various testing programs getting under way, it would seem to be a hasty and ill-advised move to burden the shipper with increased package costs predicated on a war-time claim picture.

We should be practical about this situation. Some people recently have recommended that Rule 41 be revised upward by arbitrarily increasing the weights of liner board by 10 per cent. We do not believe that the people who made this recommendation knew that an increase of 10 per cent in the weights of liner board as specified in Rule 41 would increase the cost of containers in this country by $25,000,000 annually. The annual cost of loss and damage claims for any cause for commodities that could have been shipped in Rule 41 containers did not exceed $20,000,000. The question therefore is—should we spend $25,000,000 in heavier packag-

ing to save some small part of the $20,000,000 cost of loss and damage claims.

As stronger fibre becomes more available, use of second-hand containers decrease, more labor and more efficient labor becomes available to shipper, box fabricator and railroads, and as all the other pressures of wartime recede, the measures necessary to meet these pressures will likewise recede.

WEDNESDAY AFTERNOON

Chairman, ALBERT W. LUHRS, *Vice President, in charge of AMA Packaging Division.*

Shipping Container Materials Testing—
Panel Session.

The G-E Puncture Tester—R. L. BEACH, *Apparatus Manufacturing Department, General Electric Co., Schenectady, New York.*

It would greatly simplify the work of all of us who are concerned with the designing of packing if a single piece of apparatus were available in which we could place a completely packed shipping container, and quickly obtain full knowledge of its ability to withstand the hazards of shipment, in basic numerical units. We know that probably no such universal piece of testing equipment will ever be developed, for as the hazards of shipment are many and varied, so the damages to the container or its contents may be of such a varying nature that different types of testing equipment designed to test different characteristics of the container or its parts will always be required.

We know that fibre containers are subjected to punctures during transportation, said Mr. Beach. The exact percentage of containers punctured in shipment and the amount of damage which may result to the contents is not definitely known. Studies made several years ago on large-scale shipments of canned goods indicated that the percentage of seriously punctured containers was in the neighborhood of 20%. Score-line defects is another large item of failure of fibre containers.

It was in an attempt to measure the resistance of fibre containers to these two causes of failure in shipment that the G-E Puncture Tester was developed.

The apparatus consists of a pendulum, which may be of varying weight. At the end of the pendulum there is affixed a curved arm to form a 90 deg. arc. At the end of the arm there is a triangular pyramid point, one inch in height. This point is a duplicate of a corner of a wood box or a piece of blocking lumber.

The material to be tested is placed between two clamping plates, which hold it firmly but which do not crush the corrugations of corrugated board. The pendulum is released from a horizontal position. The point at the time of release is at its lowest position, or 90 degrees from the material to be tested.

With material in the path of the puncturing point, the swing is retarded. The amount of resistance offered by the material to the puncturing point as it is forced through the material is shown on the scale and indicates the resistance of the material to puncture, by any object of similar shape and size.

Score line defects are failures of the fibres of the material. As the Puncture Tester tears about four inches of the material, it follows that the resistance to this tear is directly proportional to the fibre strength of the material and, if the material has not been greatly weakened in the scoring operation, should be proportional to the resistance to score line failures of fibre containers in service.

The average of test results from board of the same nominal weight indicates that A flute board has from 10 to 15% higher puncture resistance than B flute, with C flute probably about half way between. The exact difference is usually not important as specifications generally have enough of a factor of safety so that any variation in the test result due to the height of the corrugations is minor compared with other variables.

About 100 Puncture Testers are in use by fabricators, shippers, and commercial testing laboratories. An additional lot is now nearing completion. Personal use of the Puncture Tester for the past eight years, on all varieties of containerboards from many suppliers, indicates that the puncture test results give more information, both as to the quality of the material and its fabrication than any other single laboratory testing instrument, and are at least a guide to the liability of punctures and score line failures in shipment of containers made from the various grades of board.

The Compression Test—T. J. GROSS, *President, Container Testing Laboratories, Inc., New York, N. Y.*

We are all familiar with the fact that many large users of corrugated shipping containers have a minimum compression test requirement in their purchase specifications. Present indications are that as the supply picture improves more and more users of these containers will be asking for some such guarantee. Many of you probably also know that for several months now the Railroads have seriously been considering the incorporation of a minimum compression test requirement in Rule 41. Meanwhile the boxmakers themselves have not been idle. Many of them have set up a continuous quality control program whereby their boxes are checked regularly for compression test. At the same time they are striving constantly to improve their fabricating processes in order to get the maximum rigidity out of the materials they are using.

The compression test measures the rigidity of a container. It measures the capacity of the container to resist crushing from external forces. These forces may be encountered either as static loads, such as would be applied to the tops of the bottom boxes in a stack in a warehouse or as dynamic loads, such as would be applied to the ends of boxes in a moving car or truck when the load shifts as a result of switching or a sudden stop, according to Mr. Gross.

Since it is one of the functions of the container to prevent these forces from being transferred to the contents, the entire load should be borne by the walls of the container itself and not by the contents. From this it follows that the container must be capable of successfully carrying this load when *empty*. Therefore, in the laboratory, the compression test is usually made on empty boxes. These empty boxes are set up, sealed in the usual manner—generally by applying adhesive to the flaps both top and bottom—and placed individually in the compression machine, which consists essentially of a dial-indicating platform scale over which is mounted a steel superstructure supporting a cross-beam.

The box to be tested is placed on the scale platform and the cross-beam brought down until its attached plate bears against the upper surface of the box. As this process continues the box is slowly crushed between the descending plate and the immovable scale platform. The force thus being applied to the box is transmitted through the scale and indicated as direct load on the dial. As more and more load is applied to the box, the indicating needle gradually climbs until the box collapses.

The normal procedure when making compression tests is to test half the boxes in the top-to-bottom direction and the remainder in the end-to-end direction. In this picture the box is being tested in the top-to-bottom direction, simulating stacking loads.

The compression test, like no other single test, can furnish information regarding manufacturing practices entirely independent of the materials involved. Being extremely sensitive to fabrication defects, it provides a perfect mirror to reflect faulty equipment and inefficient methods in a boxmaker's plant.

The Conbur Incline Impact Tester—EDWARD DAHILL, *Chief Engineer, Freight Loading and Container Bureau, Assn. of American Railroads, Chicago, Ill.*

The Conbur Incline Impact Tester, as the name implies, Mr. Dahill stated, is a device for testing the adequacy of shipping containers, methods of reinforcing them, methods of closing or sealing, methods of applying inside blocking, cushioning and padding. In many instances it has also been used to determine the ability of articles to be transported and as a method of controlling the quality of the goods manufactured.

The name is taken from the first syllables of the second and third words of the Freight Container Bureau and was originated and constructed by two former engineers of the Freight Container Bureau.

Experience had shown that most damage to articles in containers was caused by stress and strain following impact which occurred either in handling or while in transit and our deductions led us to work out a modification of the Drop Test, for in this test there is definitely an impact similar to that which a package may receive.

The device is a simple one which can be easily and cheaply constructed and there are only four necessary features that must be followed. The first, and the most important, is that the angle of the incline to the horizontal be 10 degrees; second, that the track on which the dolly rolls be straight and smooth; third, that the wheels under the dolly be free running and ball bearing, and fourth, that the backstop be sturdily built and unyielding.

On this device a container ready to be shipped, packed and sealed as it would be for commercial shipment, can be placed on the tester and subjected to impacts. The impact can be made on any or all faces in rotation or against any of the edges or against any of the corners by making use of a simple carriage placed on the dolly. By inserting a block on the backstop eccentric impacts can be readily obtained with a twisting or skeeing action.

It is capable of testing boxes either wood, fibre, plywood panel, wirebound, wooden or metal barrels, crates of all descriptions, drums, baskets and pails. Depending on the size of the dolly, containers at least 4 feet cube can be readily tested.

The Cushioning Meter—D. B. FISK (*appearing in place of* J. H. GOSS, *Engineer, Works Laboratory, West Lynn Works, General Electric Co.*)

If a package is dropped from a height and lands on a firm floor, assuming a flat drop, the outer container first comes to rest, but the contents continue in motion against the spring action of the cushioning material until the contents come to rest, said Mr. Fisk. The distance the contents is allowed to move by the spring and the character of the spring's resistance to compression determines the shock that the contents is subjected to as the result of the fall. The rate of change of velocity with which the contents comes to rest after the outside container lands is called the deceleration and for most objects that are packed the maximum value of this deceleration is a good measure of the shock that the contents is subjected to.

If a ready means of measuring the peak deceleration is available, it is obvious that by dropping a given packing from increased heights until damage is found to occur to the contents and by measuring at the same time the peak deceleration, a limit of allowable deceleration can be set which will serve as a bogey for the design of a proper cushioning system for the type of contents to be protected.

An instrument that has been developed to measure the deceleration is the cushioning meter. It consists essentially of the detector head which is connected to the indicator by a flexible cable.

The detector head is taped or fastened to the object to be packed or a dummy object of approximately the same size and weight. The object and detector head are then packed and the package is dropped from either a predetermined height or from varying heights. After each fall, the indicator lamps on the panel, glow, indicating the maximum value of deceleration that has been reached. These lamps are calibrated directly in "g's" (unit of shock) and two detector heads have been found useful. One of these heads has a range from 20 to 100 g's in 12 steps and the other head has a range from 100 to 500 g's in 12 steps.

Essentially the detector head responds to the maximum value of deceleration reached and actuates an electronic circuit which causes the indicator lamps to glow. After the shock, the lamps continue to glow until a reset button is pressed which allows ample time to observe and record the reading.

The Drop Test—A. L. GREEN, *Special representative, Freight Claims Division, Assn. of American Railroads, Chicago, Ill.*

An inexpensive drop table is a platform hinged at sides' which, when tripped, opens at center—like a trap door—to let the shipping case fall through, for the height of drop determined by weight of case or nature of product, Mr. Green explained.

The drop table has been approved by the American Society for Testing Materials (reference D 775-44 T), also by the Technical Assn. of the Pulp and Paper Industry (T802M-44).

The drop table is not a substitute for compression, bursting, tear and other tests. It is a satisfactory substitute for the revolving drum and such allegedly practical procedures as rolling a package down a flight of stairs or similar rough handling.

For a large number of tests—a complete analytical report—a well-equipped laboratory should be employed. But when the average manufacturer of a damageable product wants to know whether there is a sufficient factor of safety in his packaging to withstand the unavoidable hazards of distribution, this test is thoroughly practicable.

This test is particularly suitable for comparing the merits and sufficiency of inner packing materials. The variety of such materials on the market suggests—and transportation experience confirms—that the most suitable type of cushioning, padding, partition, etc., is not always selected.

Closure efficiency can also be compared in this way—tape, stitching or gluing of flaps, nailing and the advantages of metal

strap reinforcement. Moreover, as a simple yardstick for determining whether the package meets the requirements of Rule 5 of the Consolidated Freight Classification, this type of test is worth considering.

The railroads have most at stake in a program of this kind. For the year 1944, about 57% of the total amount paid in claims was for damage to packaged freight and, for 1945, approximately $50-million was paid for such damage. A large part of this damage was chargeable to inferior packages of all types and inadequate interior packing. During recent years shortages of adequate materials and competitive conditions among those materials have caused a very definite lowering of the strength of fibreboard boxes.

The Revolving Drum Test for Boxes—T. A. CARLSON, *Chief, Division of Material Containers, Forest Products Laboratory, Madison, Wis.*

The revolving drum, as developed at the Forest Products Laboratory and used in many laboratories throughout the world, is hexagonal in vertical cross section and revolves slowly, said Mr. Carlson. The box to be tested is packed with the materials to be shipped or with materials simulating them as closely as possible, before being placed in the drum. Upon the six internal faces of the drum, hazards and guides are arranged in such a manner that, as the drum revolves, the loaded box slides and falls, striking on its ends, sides, top, bottom, edges and corners. On one face of the drum is a projection upon which the container falls to encounter a puncture hazard similar to that of a box upon which another has dropped cornerwise. Thus, there is combined in this single test practically all the stresses and distortions to which containers are subjected in service except those caused by stacking loads in storage warehouses.

In performing a test each face of the drum is counted as one drop. The observer records each failure and the number of the drop at which it occurs. The test is usually continued until the container loses its contents.

The drum is not considered to be a precision instrument. Differences in speed of operation may result in variability of results. Then there is the matter of smoothness of the faces of the drum. The nature of the falls would be different in these two instances. The human element also enters into this problem through differences in judging the end-point of the test. But of even more significance, perhaps, than any of these influences is the fact that the boxes being tested are not precision built. The wide differences in quality of material used in constructing boxes intended to be identical, as well as the variability in the workmanship and details of assembling and closing are likely to cause just as much variation in test results as any characteristics inherent in the drum or its operation. It is because of all of these factors combined that package engineers always insist on testing at least five boxes and, preferably more, of each kind in order to obtain data that they consider reliable.

Since the first one was built in 1913, according to records of the Forest Products Laboratory, there had been built, before World War II, 35 of the 7-foot drums and about 12 of the 14-foot size.

The Vibration Test—EARL R. STIVERS, *Director of Research, Package Research Laboratory, Rockaway, N. J.*

The idea of testing shipping containers on a vibrating table is of fairly recent origin. None of the other types of tests for shipping containers introduces vibration, according to Mr. Stivers.

The most desirable procedure would be to have the action of the test simulate exactly the conditions of transportation, but, in most cases, even if known, this would take so much time that the test would become tiresome. On the other hand, if the test is too severe the results can be misleading. Regardless of the test conditions, it is difficult to state at this time with certainty that any amplitude or any period on a vibrating table is equal to a definite number of miles on a carrier.

In a railway car, the springs are set in vibration by the joints in the track and by the roundness of the wheels. At some critical speed, resonance sets in and the springs go solid. Trucks, boats and planes have behavior patterns of their own which are usually quite different from railway cars.

Some authorities estimate that average railway freight conditions produce 2g forces at 5 to 10 cycles per second. Army-Navy tests for truck handling are said to indicate transient shock vibrations equal to 5-in. excursions at 3 cycles per second. The Army Air Forces are proposing tests of .025-in. excursions at from $16^2/_3$ to $66^2/_3$ cycles per second.

One design of vibrating table now in use has $^1/_4$-in. excursions at approximately 9 cycles per second. Another design of vibrating table has 1-in. excursions at $4^1/_3$ to 5 cycles per second.

These differences need not stop us, however, from using the vibrational test. It can be valuable in obtaining comparative results for improving interior packing methods. A check against actual transportation experience can often give us good correlation for particular items. In a comprehensive series of tests on a large variety of case liners, the results duplicated experience in actual shipments of material to the war theaters. In packing for glass insulators, the results quickly revealed the inadequacy of the interior separators. In tests on egg cases, a marked difference was evident from various packing methods. In tests on belted ammunition, the same failures occurred as were reported from the war fronts.

The vibration test can be used to good advantage on many types of packaged articles, a few of which are suggested by the following list: enameled household appliances; bottled liquids; refrigerators and washing machines; glass and glassware; mercury arc lamps and neon signs; electrical instruments; machine assemblies; abrasive wheels; eggs in cases; export shipments in protective liners.

Correlating Laboratory Tests with Actual Performance—ROBERT C. MCKEE, *Chief, Container Section, Institute of Paper Chemistry, Appleton, Wis.*

At the present time there is underway at The Institute of Paper Chemistry a general program of paperboard and container research and development which has as its broad objective the development of factual knowledge pertinent to the paperboard and container industries. One phase of this broad research program is devoted to an extensive field study, the ultimate objective being the correlation of laboratory tests with field performance, said Mr. McKee.

The basic approach to this phase of the work which involves the handling, storage, and transportation of commodities in fibreboard containers is as follows:

A. Survey, analysis and classification of hazards.
   1. Typical load-bearing commodities.
   2. Typical non-load-bearing commodities.

B. Survey of field testing techniques.
   1. Analysis of previous studies where available.
   2. Study of testing equipment needed.
   3. Development of improved field testing techniques.
   4. Determination of the number of field trials necessary to give statistically valid comparisons in a given study.

C. Instrumentation.
   1. Analysis of present testing procedures and equipment.
   2. Development of testing procedures and equipment where needed.

D. Laboratory evaluation of paperboard and boxes corresponding to the boxes used in the field studies.
   1. Components.
   2. Combined board.
   3. Containers.

E. Field studies—observation of performance of the containers used in the field trials.

F. Statistical analysis of the results of the field tests.

G. Correlation of laboratory tests and field performance.

THURSDAY MORNING

Chairman, JOSEPH GIVNER, *President, National Merchandising Corp., New York, N. Y.*

Package Design Trends and Standards—WILLARD F. DEVENEAU, *Sales Promotion Manager, National Folding Box Co., New Haven, Conn.*

While serious shortages of packaging materials, price uncertainties and a large backlog of unfilled orders represent definite handicaps to immediate package production, said Mr. Deveneau, nevertheless there is ample evidence to prove that manufacturers are determined to restore packaging to its prewar importance, and the necessity will be upon us once more of stimulating people to buy, by aggressive and intelligent merchandising.

Since the ultimate purpose of good package design is to influence people favorably to take buying action, neither the manufacturer nor the package designer can afford to overlook the significant changes which took place during the last four years.

Five basic changes will materially affect our markets for packaged goods in the years ahead:

1. *Changes in location*—These were twofold in nature, first, the 10 million boys and girls in the Armed Forces who left their homes to live, work and fight in strange places and under conditions foreign to anything they would have ever experienced in normal times, and secondly, the shifts in our civilian population from their homes to war production centers, which suddenly blossomed into boom towns.

2. *Changes in income*—Certainly wartime purchases at retail levels failed by a wide margin to keep up with wartime expansion of incomes, meaning that there has been built up a huge volume of deferred demand which yet remains to be satisfied.

3. *Changes in habits*—Despite the griping of the "doughboys" of World War I about the evils of a diet of "whistle berries," "gold fish" and "corn-willy," the later tremendously increased sales of canned baked beans, salmon and corned beef revealed the definite change which had taken place in their appetites as a result of their Army experiences. Since our present veterans served longer and in more foreign countries, the changes in their habits and tastes may be even more marked, carrying over into their restored role as civilians. Meanwhile revolutionary changes took place in the habits of our civilian population, for with unprecedented cash incomes they have spent freely on such luxury and semi-luxury goods as were available.

Shortages of needed goods together with the trials of rationing, have caused consumers to become far keener in their appraisal and appreciation of quality and value, and hence more discriminating in their selections. Failing to find once-familiar, advertised, trade-branded products consumers have switched to previously unknown brands and been surprised to find them equally good, if not better, which means they will not go back to the former brands without considerable persuasion.

4. *Changes in retail stores*—Rationing, shortage of goods and loss of personnel were the chief causes for a decrease of approximately 15% in the number of retail stores during the war. While many new stores will be opened to take their places, we might mention a few trends which will affect future retail operations:

"Neighborhood stores" will continue, Mr. Deveneau claimed, but there's a growing tendency in favor of fewer but more complete stores on the part of the large operators.

Store modernization is being widely adopted as a cost-lowering factor. Decentralization of retail shopping areas seems certain in favor of shopping areas free of downtown traffic congestion.

Manufacturers will take wider interest in retailing either by: actually entering the retail field as operators of their own stores; or giving more extensive assistance to building up independents, through new store layouts, better merchandising plans, stock control, display, advertising and expanded installment selling. Expansion of products handled to build increased traffic and larger purchases. Potential effect of air-transported goods in reducing inventories, faster stock-turnover and handling seasonable, perishable or expensive goods. Expansion of the self-service idea, particularly in super-markets, involving the prepackaging of fresh meats, delicatessen items, fruits, vegetables, drugs and cosmetics, household needs, wines and liquors, auto accessories, sporting goods, electrical appliances, hardware and even musical recordings.

5. *Changes in products*—The war experience of manufacturers using their production facilities to make products unrelated to anything previously made, plus the natural desire to have new or materially improved products for the competitive days ahead, will exert a marked influence.

In addition to knowing people, Mr. Deveneau continued, and being able to sense changes in public taste, caused by such changed ways of living as we've just described, the executive responsible for sound package design development must know business. For in addition to his role of interpreter of the needs of the ultimate consumer to business, he must be able to reconcile and bring into harmony somewhat divergent and oft-conflicting interests found within the average manufacturer's own organization. My own long and varied experience has suggested the wisdom of studying a packaging problem and developing a package design, in four major steps:

1. *Fact basis*—This step consists of gathering all pertinent data dealing with the history of the business, the product, competitive products, the market, method of selling, advertising and sales promotion placed behind the product, past packaging efforts and objectives sought.

2. *Fact analysis*—This step concerns itself with such phases as: how well the product meets the needs and desires

of the market; the unit sizes offered in relation to established consumer preferences and competition; how widespread is the market's knowledge and acceptance of the product; and whether this involves an entirely new kind of purchase or simply a "switch sale"; study of present shortcomings in the distribution channel; analysis of salesman's approach and selling equipment; constructive review of past advertising; relative excellence and conviction brought by the company's advertising messages; and summing up the sales resistances which are in need of improvement.

3. *Design foundation*—This step really embraces two distinct aspects or phases of package design, namely: (1) from a structural standpoint and (2) from a merchandising standpoint.

4. *Package visualization*—This involves two separate phases, as follows: (1) dummies—made of all packaging materials which will measure up to: adequate product protection; practical production; ready availability of materials; adaptability to product use; ease of handling; and relative economy of packaging materials. A sufficient number of dummies should be made to conduct conclusive tests dealing with every phase of packaging from those in the product manufacturer's plant right through shipment until the product reaches the ultimate consumer. (2) Sketches—after a reconsideration of all the essential data outlined in the preceding steps, the actual work of visualizing the new package design can be undertaken, first through preliminary rough sketches and then through comprehensive full-color sketches.

As a pleasant reaction to the somberness of the war years, bright colors will play a vital role in this new age of ours, for people never lose their joy in color. Because of his good taste and well-developed sense of color, the package designer will base his use of this appealing selling factor upon the character of the product and the type of emotional appeal desired in its package.

As a result of the emphasis placed on protective packaging during the war many promising laminations were developed. Typical of these were: aluminum foil combined with kraft paper, cellulose acetate, nitrose cellulose and other films; glassine combined with cellophane; and Pliofilm and other utility films laminated inside of folding paper boxes to perform functional purposes. Since no one film can meet all package requirements, it is possible to take advantage of the better qualities of several films by combining them. On this basis some laminations have combined four or five papers, films, foils and paperboards, with special adhesive, to provide certain specific types of product protection.

No doubt corrugated and solid fibre containers will become more colorfully printed, encouraged by the experiments being carried on by Southern kraft manufacturers of using white coated liners, which opens the way for all-over colored coatings, and distinctive color printing on these useful containers. And in addition, certainly modified versions of the "V" containers will offer real competition to wooden boxes.

The new, one-way beer bottle is indicative of the development of better designed, stronger, lighter and less expensive glass containers. Plastics have shown tremendous developments, particularly in the way of new and improved production techniques, which make them available for many new packaging applications. Transparent sheetings for foods will speed up retail shopping, and permit many producers to get trade brand identification for their products.

The Responsibility of the Package in Self-Service Selling— L. B. STEELE, *Sales Manager in Charge of Advertising and Promotion, Cellophane Division, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.*

While impulse buying, Mr. Steele said, has been recognized in principle by many, our organization was really a pioneer in measuring its extent. As early as 1934, surveys were started in grocery stores to determine what part of the purchases had been on impulse. Results showed three out of four shoppers had bought one or more products on impulse, and 24% of the total items were bought in this manner. Later similar surveys were run in department stores where impulse purchases were clocked at 42%, and in variety stores where they totaled 51%.

In order to determine what effect the war may have had on impulse buying, our surveys in this direction have been resumed. One such survey conducted recently among 1,300 super-market shoppers in seven different cities (Atlanta, Ga., Springfield, Mass., Yonkers, N. Y., Cincinnati, Minneapolis and San Francisco) showed that 38% of the products bought had been on impulse. In addition, 13% of decisions on what brand to buy had been made at the time of purchase. Therefore, he continued, under strictly self-service operation, impulse buying jumps to very sizable figures. It has been our experience that most executives in the consumer goods field realized the presence of impulse buying, but did not appreciate its extent.

Super-markets—Most people associate the term "self-service" primarily with the food super-market, and we have seen a remarkable development in that direction in the last 15 years. Two bottlenecks in the flow of traffic in the average self-service market were the meat and produce departments. Here the consumer had to wait while the meat was cut and priced or produce trimmed and packaged. Progressive retail organizations, sensing the need to make these departments self-service like the rest of the store, have been experimenting in this direction. In one test of prepackaged self-service produce conducted by A & P at Columbus, (MODERN PACKAGING, July 1945), the consumer reaction showed a four to one preference for buying produce in packaged form. Another survey (MODERN PACKAGING, February 1945) showed 77% preferred self-service meat for reasons such as "convenience, speed and opportunity to inspect thoroughly before buying."

Regular groceries—In a recent survey conducted by our company among 27 wholesale grocers serving 44,000 stores, it was found that 40% of the stores are on either a complete or semi-self service basis now. In addition, 28% of the stores expect to convert to self-service partially or completely during the next two years.

Variety stores—The W. T. Grant Co. has explored the possibilities of an entire self-service set-up, with check-out counters like a super market. While interrupted by wartime difficulties, this test showed promise. Operating costs dropped 2%.

Drug stores—Self-service and self-selection are a big factor in the drug store field too. Out in Kansas City, the Katz Drug Co. even tried out a complete self-service drug store set-up in food super-market style. This didn't prove practical, but they are great believers in open display, and find that customers are attracted by good packaging.

Department stores—In a survey we recently conducted among a cross-section of department store executives, 98% stated open display increased sales. In the same survey was found that 86% of the stores believed effective packaging

of products displayed influenced customers to serve themselves.

Miscellaneous stores—Looking into the hardware field, we also see a recognition of the use of self-service as a medium for extra sales. One of the progressive organizations in this field, Hibbard-Spencer and Bartlett of Chicago, visualizes a steady increase in self-service and believes packaging is very necessary to make many hardware items suitable for display and self-selection. The type of store operated by Sears and other organizations likewise follows the pattern of passing the shopper before an open display of merchandise calculated to activate a number of dormant needs. The tire auto accessories store, like that operated by Firestone, prompted by war shortage of tires, turned to new related lines to keep volume up with promising results. Open display—self-selection will play a big part in their plans. And the oil companies in their postwar service station program are utilizing the time of motorists waiting for cars to be serviced to direct their attention to displays.

Vending machines—A substantial and growing volume of business in a wide variety of items is going through this channel. According to latest announcements, you will soon be able to buy even a hot dog sandwich—with the emphasis on the "hot"—via vending machine.

As self-service and self-selection move forward, so aggressively, concluded Mr. Steele, let us see just what requirements this type of merchandising places on the product: (1) the package must attract attention; (2) the package must tell the product story; (3) the package must build confidence; (4) the package must look clean and sanitary; (5) the package must be convenient to handle, to carry out of the store and to use; (6) the package must look like good value. In addition to these consumer factors, there are several factors important from the dealer standpoint: (1) the package must look like a fast seller; (2) the package must deserve a preferred display; (3) the effective package must minimize the clerk's selling time required; (4) the effective package must be convenient to stock and display; (5) the package must prevent spoilage during selling period; (6) the package must resist soilage.

Presenting Your Package at the Point of Purchase—WILLIAM H. CARMICHAEL, *Sales Manager, Arvey Corp., Jersey City, N. J.*

We have heard and talked, Mr. Carmichael said, a great deal about the postwar retail store. I have personally seen plans for these stores. Two years ago it seemed to be the general opinion that shortly after V-E and V-J Days, new gigantic markets would appear out of nowhere. These mammoth outlets would be almost entirely mechanical. Unheard of devices were talked of for transferring goods from manufacturer to consumer. It seemed that all the customer would have to do would be to step into the store, make a wish, press a button and immediately have her shopping tour completed for her.

These new inventions have not appeared nor will they for some time. The best-informed men on the subject are talking of two and possibly three years. Some optimistic souls believe these changes will take place sooner. One truth, however, has been developed, and that is that for the present we must no longer wait for the Buck Rogers outlet. If we are to insure the movement of merchandise from manufacturer to consumer, we must accept the present retail outlet and bend all our efforts to merchandising our goods in the best possible way in it.

In doing this, however, you cannot afford to shut your eyes to the future, he continued. *The new stores will come.* They will come in the form of more and larger super-markets. With their coming, self-service will play such a part as has not yet been dreamed of. Present-day markets will be as much things of the past as the "cracker barrel" days are to us now. There is little enough personal information available to the shopper today. In the new super-retail-outlet, there will be less—unless you, as advertisers do something about it. The answer is proper packaging properly presented at the point of purchase.

Let us consider a recent survey made in 14 large cash-and-carry super-markets, by hours and by days, in 14 cities, coast to coast. It should be borne in mind that the total yearly sales of these 14 stores are $3,178,060, or an average per store of $226,290. The business increase in these stores from 1940 to 1941, was 37.9%. Of this, the self-service increase was 18.3%, and that of semi-self-service 11.3%. Since the increase of grocery sales in this country for that year was only 9%, this gives an increase of 28.9% in self-service and semi-self-service business of the 14 stores in question.

Point of purchase advertising is the medium by which the national or sectional advertiser's message is given to the consumer at the place where the consumer buys. It is not a substitute for any other medium. Its chief aim is to follow an educational advertising campaign. The outstanding difference between this and other media is that while nearly all other advertising deals with the future purchase at a remote location, point of purchase advertising takes place at the point of sales.

We of the display industry, in all of our studies and surveys, have sought to answer this question: "If merchandise is properly presented at the point of sale, and if point of purchase advertising is used with this presentation so that the entire promotional effort at the point of sale ties in with the general merchandising plan of the advertiser: (1) to what extent will the advertiser gain in volume of sales? (2) To what extent will the retailer gain not only in the sale of the particular merchandise in question, but also in sales of other merchandise carried? (3) What is the advertiser's and the retailer's gain in prestige from such an effort?

A leading liquor company, Mr. Carmichael pointed out, made a test to determine the effect of display emphasis on one brand of gin, in relation to sales of other brands of gin. If the displayed brand showed sales increases at the expense of the other brands, it would be obvious that, while the manufacturer of the displayed brand had benefited—the retailer had suffered generally in gin sales. Results were: (1) The display increased sales of the displayed brand 157% (average). (2) Sales of the undisplayed brands increased 12% (average).

In March, a merchandise type display and an interior display fixture were installed in each of 100 drug stores, in which group was included the 24 to be tested. The operation was concluded in April and May. Results: The display effort did not simply move purchases from non-display to display stores, but—on the contrary—resulted in a substantial improvement in both display and non-display stores.

And, he concluded, in a test made by the A. C. Neilsen Co., sales of four advertised products were checked in every grocery outlet in a city to establish normal flow. In half the stores in town, displays of the four test products properly supported by manufacturers' display pieces were installed. In the other half, the four products were kept on the shelves and no special displays were used. Results: In the 50% of the stores, where displays were used on the four test items, the

average increase in sales during the test period (one week) was 35%. In the 50% of the stores where no displays were used, sales of the four products dropped 26%. Net gain for week in all stores—8%.

THURSDAY AFTERNOON

Chairman, DOUGLAS KIRK, *Mechanical Research Department, The Quaker Oats Co., Akron, Ohio.*

The Packaging Machinery Situation Today—FRANK B. FAIRBANKS, *President, Horix Manufacturing Co., Pittsburgh, Pa.*

Although packaging machinery is currently being produced at a rate two to three times the prewar production, on a conservative estimate, the backlog of orders continues to pile up faster than output can be increased, and there is little hope that deliveries can be improved for some months to come, Mr. Fairbanks told his audience.

The latest available figures from the Civilian Production Administration show an increase in unfilled orders amounting to 160% above those on Dec. 31, 1944, he said. This total amount represents about 15 months' work at the present rate of delivery, even if new orders ceased to come in. The fact is, Mr. Fairbanks warned, that deliveries will probably become worse before they get better, because of delays in delivery of components.

All of this means that not only will orders for standard equipment face a long wait for delivery, but development of special equipment, or custom-built machines, is practically out of question for the time being. All machinery manufacturers have new things planned, many of them revolutionary in nature, the speaker said, but it is useless to look for these revolutionary changes for a long time to come.

The picture is not entirely black, however, Mr. Fairbanks declared. On the favorable side he listed the following:

1. To meet the insatiable demands of the war machine, all machinery manufacturers increased their production facilities, increased their manufacturing space, installed higher speed and more precision equipment, capable of turning out parts faster.

2. Our machinists have learned to work to closer tolerances, which means more perfect interchangeability of parts; in brief—better packaging machines, greater uniformity.

3. The large backlog of orders has permitted running component parts in larger lots, making it economical to invest more extensively in jigs and fixtures.

4. While no one enjoys a price squeeze, I can assure you that the pressure is becoming almost unbearable. In the long run it will rebound to the benefit of our customers, because it is forcing the elimination of wasteful and careless methods which grew up during the war years, and compelling the development of new and better methods.

5. Materials such as bronze and stainless steel are again available, and so-called victory models are out. No customer needs defer placing orders for fear that inferior materials will be employed.

6. Last but not least among the favorable factors is the return of our former employees who served in the Armed Forces.

But there are many unfavorable factors contributing to slow and uncertain deliveries, among which are the following:

1. Many new employees have been and are still being trained. Key personnel, particularly engineers, supervisors, assemblers and service men have been particularly difficult to obtain and require extensive training.

2. During the war, practically all of our best engineers were put on war work, to keep production rolling. That naturally interrupted the normal design and development of packaging machinery.

3. Due to the tremendous pent-up demand for industrial equipment, every manufacturer is flooded with inquiries from all over the world. Our engineering and sales departments are taxed to the utmost in trying to handle these inquiries correctly.

4. While in general the packaging machinery manufacturing industry has had few work stoppages among its own personnel, severe shortages have been caused by the strikes in the steel and electrical industries, the effect of which will rise up to plague us for many months to come.

5. Castings, fractional horsepower motors, conveyor chain and certain steels are now very scarce. In fact, the procurement of many items is now more difficult than it has ever been, even during the war.

6. Sudden increases in costs, particularly labor, have pushed them through too-rigid OPA ceilings, with the inevitable result that components that we formerly purchased are no longer being manufactured. For the same reason, packaging machinery manufacturers have been forced to discontinue certain models which are too unprofitable.

7. In order to increase production, manufacturers must produce machines of the same type in groups, thus permitting component parts to be made in larger quantities and complete machines to be assembled in groups. If a customer's order happens to be the first of a new group and consequently delayed until a sufficient number are booked, it may require longer to deliver than if orders for all types of equipment were made in the sequence that orders were booked, but obviously, from an over-all standpoint, hodge-podge production of parts and assembly of individual machines would decrease production, increase manufacturing costs, and ultimately entail higher prices to purchasers.

Specifications for Adhesives—GERALD REINSMITH, *Material Engineer, Office of Chief of Ordnance, War Department, Washington, D. C.*

There are three generally accepted methods for writing adhesive specifications. One method is to base the requirements entirely upon performance. Another method is to base the requirements entirely upon composition. The third and most widely used method is to base the requirements upon both performance and composition. In most instances specifications are being prepared using the last-mentioned or combination method.

It is my opinion that the ideal adhesive specification should be based upon performance alone, specifying recognized physical terms and requirements; reproducible test methods and standard conditions, and defining any requirements, words, phrases or test methods not officially defined by authoritative groups. It is recognized that performance of an adhesive covers a wide field, including factors of physical strength and endurance, corrosion resistance, resistance to flammability and a number of functional requirements each of which should be given full and careful consideration.

There are many advantages that can be attributed to performance specifications, one of which is that no manufacturer can claim his product is being discriminated against. Another important advantage is the ease with which changes from one material to another may be made in times of critical shortages. Still another advantage is that the manufacturer is informed as to what is needed and what the material will

need to do rather than to be told how to make it. In this way many minds are free to be constantly attacking the problems, all with the same objective and each from their individual viewpoint.

It is recognized that all the advantages do not lie with the performance type of specifications when considered versus composition specifications. There are those individuals who do not believe that we will ever have specifications based purely on performance. This belief is based upon business practices and procedures such as the case of the informed buyer; that is, one who knows his performance requirements completely and accurately. Many times such a buyer has a far more profound knowledge of the relations between performance and a certain composition than most or all of the producers of the product itself. Furthermore, in the design of large structures involving public safety, the designer is found to consider the factor of reliability based on years of satisfactory service; although he may be able to write a pure performance specification which he thinks would duplicate the product previously used in that service, he still may be forced to admit that a change in composition might give rise to unforeseen adverse effects.

It is recognized that an adequate performance specification can be prepared only when all the desirable characteristics of the adhesive are known and are definable, and when accurate short-time tests for these characteristics are known. It is unfortunate, however, that this situation does not exist in all instances.

Another factor which sometimes makes the combination type of specification preferred to the performance type of specification is economy. When an adhesive of a given chemical type is specified, certain inherent properties may be assumed and tests therefore omitted, whereas if the material is completely unknown it becomes necessary to test each batch.

Specifications are not and never will be perfect; neither should they be construed as inviolate or not subject to change and modernization. It is believed that every producer can, if he is progressive and aggressive, generally overcome a discriminatory specification if he really has the goods. On the other hand, the large, well-informed buyer (who generally is the principal one using specifications) can seldom open up his specification—by the complete omission of requirements of composition and manufacture—so as to prevent at least some partiality. After all, if he has such partiality based on long use and careful study, and many times on extensive testing which the producers cannot afford to indulge, why should he not be privileged to express his partiality. For instance, if extreme water resistance is wanted in a glue, the question may be raised; why not be thoroughly practical and deliberate in specifying the particular phenolic or other resin types that will give this: give the performance requirement wanted; and then let the starch or other people prove that they can grade up their product to meet the specifications. When, and as this is done, they will be admitted.

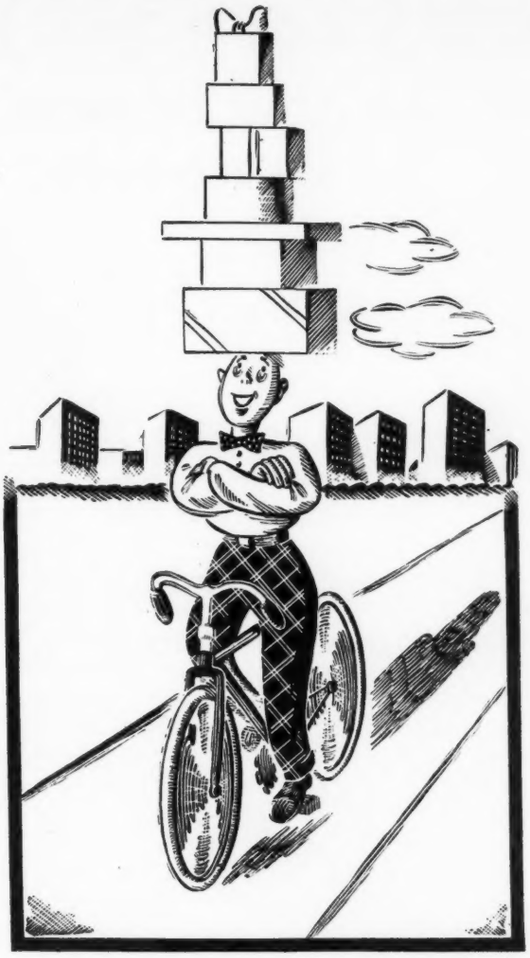
In general, a specification should define, as fully and completely as possible, minimum acceptable performance requirements; the least that will do the job, not the most or the best. Specifically, it should set forth or do the following:

1. The purpose of the specification should be stated.
2. The materials to be used in making test specimens (wood, metal, etc.) should be carefully defined and method of preparation specified.
3. The conditions under which the tests are to be carried out should be specifically defined in terms of sound commercial practices which can be readily met in the average laboratory and not something that can be obtained only by purchasing a special type of conditioning cabinet or other device.
4. The exact methods of test should be described in detailed manner if they have not already been carefully described in some authoritative source, or are not generally recognized.
5. The equipment to be used in conducting tests should be standard, or if not standard, should be specified.
6. Results to be tabulated and the method of computation desired in the report should be specified.
7. Standard, time-tested methods should be specified in lieu of radical innovations, or more elaborate newer tests which may be unusually long or tedious, even though the former does not always measure a single property perfectly.
8. All details should be accurately defined. An example of this is the present confusion concerning the temperature at which the working life of the glue should be determined.
9. Particular care should be given to the significance of the tests required. When making an accelerated performance or aging test, new factors may enter the picture which make the results of little value.
10. A uniform method of preparation and expression of requirements should be followed in order that the full objective of the specification may be realized.
11. Description of the tests should be in a separate document which can be referred to in the material specifications.
12. The specifications should be boiled to a minimum.
13. The source of supply should be known and examined in order to determine what is wanted and prescribe material which is an example and which can be made.

It appears that, ideal as it may be, adhesives specifications based purely on performance are a long way in the future. Because of the present status of our knowledge, lack of standard test methods and because any large volume of opposition to preparing purely performance specification at this time would block rapid development, it is recommended that we restrict the scope of our specifications at this time to certain types of adhesives and certain definite performance tests without losing sight of the ultimate goal. An immediate and worthy goal is the development of standard test methods covering physical and chemical properties of adhesives.

Many of the thousands who stopped at MODERN PACKAGING'S booth at the Packaging Exposition sought some meaning or symbolism in the mass display of spring flowers which comprised the exhibit. There was none. We simply thought that in the vast panorama of functional packaging there should be one booth where visitors could stop and rest and enjoy the beauty of springtime. And in case you've wondered what happened to those flowers when the show closed, here's the answer in a letter from Mrs. Helen H. Husted, Field Director of England General Hospital: "We wish you could have seen the reaction from the patients when they received the plants. . . A patient takes it from here: 'Hospitals could do with more color; particularly Service Hospitals . . . where men have not had the time for *flowers*—plus other essentials of a normal life. We thank you for the beauty you have added to England General . . . The Red Cross thanks you for your kindly help in making people happy."

No Hands!



BURT produces packages automatically. We have special machines—many of them designed and built for us—for producing small, round, square and oval set-up boxes; folding cartons and counter displays.

Automatic production means uniformity of product. It means a high speed output—a volume output numbering packages in the millions. That is why so many of America's leading names—products that are sold to the largest mass markets—are found on BURT containers.

Send for samples and prices.

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500-540 Seneca Street, Buffalo, N. Y.

New York City - Philadelphia - Boston - St. Louis - Atlanta
Chicago - Cleveland - Cincinnati - Los Angeles - New Orleans
Memphis - Minneapolis - Kansas City
San Francisco: 1831 Pacific Ave. — Telephone EXbrook 5323
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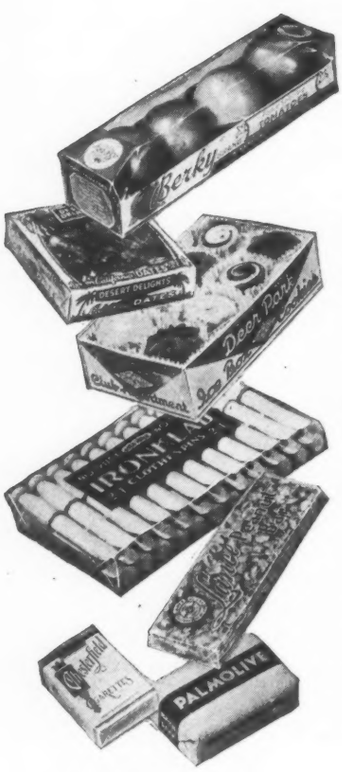
CANADIAN DIVISION
Dominion Paper Box Company Ltd., 469-483 King St. W., Toronto 2, Canada

"...AND SOME OF THOSE BIG RED ONES!"

EYE-APPEAL

has always been a great sales advantage



Packages that sell wrapped on machines that save

Time hasn't changed Mrs. America's buying habits very much. As a child, she invariably selected the most colorful and exciting article in the candy show case. And today, a trim, colorfully wrapped package, which displays the product to the best advantage, influences her in much the same way ... Catches the eye ... stimulates desire ... produces sales.

Because of their extreme versatility, our wrapping machines produce such packages for a wide variety of products. And thanks to recent developments, we are prepared to offer machines capable of wrapping many additional products heretofore sold in bulk—sheets, towels, underwear, hosiery, fruit, vegetables, etc.

All of these machines incorporate the most advanced principles of design, insuring smooth, trouble-free operation, high speed, long life, simplified supervision and important overall economies. Most models are quickly adjustable for a wide range of sizes.

Packaging Improvements

If a better selling package figures in your merchandising plans, we suggest that you avail yourself of our recommendations. Modern machine wrapping often plays a vital part in making such plans practical and economical. Write or phone our nearest office.

Our booklet "Sales Winning Packages" will be mailed on request.

PACKAGE MACHINERY COMPANY, Springfield 7, Massachusetts
30 Church Street, New York 7 • 111 W. Washington Street, Chicago 2 • 101 W. Prospect Avenue, Cleveland 15
182½ Spring Street, N.W., Atlanta 3 • 443 S. San Pedro Street, Los Angeles 13 • 18 Dickens Avenue, Toronto 8

PACKAGE MACHINERY COMPANY

Over a Quarter Billion Packages per day are wrapped on our Machines

Sealing temperature and WVP

. . . a correlation in effectiveness of waxed papers

by William Rabak and J. B. Stark*

Waxed paper was one of the first sheet materials to be utilized in the protective packaging of food products. Its value for this purpose is due to its water-vapor resistance and to its amenability to heat-sealing. It is utilized in bags, bag liners for packages, and as heat-sealable overwraps. In all cases the closures are effected by heat-sealing, the source of heat and pressure being supplied by either manually or automatically operated electrically heated sealing devices.

Control of temperature is of great importance, in order to insure minimum impairment of the protective characteristics of the sheet. In many cases, lack of adequate temperature control on sealing devices results in temperatures too high or too low for most effective results. During closure by heat-sealing, the wax coating is heated to its liquefaction point and the surfaces are held together by pressure until the coating resolidifies. Examination of the sealed area after the completion of uncontrolled heat-sealing indicates considerable variation in bonding strength and efficiency of similar coatings. This condition appears to be influenced by such factors as sealing temperature, time of contact with sealing jaws, type of paper, and amount of coating.

Retention of quality of many packaged food materials depends upon protection supplied by waxed paper against loss or gain of moisture. Consequently experiments were planned for the study of, first, the water-vapor resistances of two types of paraffin-coated paper in wide usage; second, the effects of various sealing temperatures on the permeability of two weights of paraffin coating (1) on the same type of paper and (2) on a highly calendered paper; and, third, controlled hand-sealing as compared with automatic machine-sealing.

Waxed papers investigated

Two representative types of waxed paper in commercial use were selected for this investigation. One consisted of a 25-lb. opaque white sulphite paper waxed on both sides to a final weight of 37 lbs. per ream. The same type of paper weighing 22.5 lbs. and waxed to 38.25 lbs. was also included to permit evaluation of the effects of increased wax. The other type was a highly calendered 24-lb. bleached sulphite stock waxed on both sides to a final weight of 30 lbs. The paraffin coating of all the sheets was the commonly used type having a melting point of 135 deg. F.

Determination of water-vapor permeability

The water-vapor-permeability determinations were carried out in quintuplicate according to the method developed by the Technical Assn. of the Pulp and Paper Industry, known as the TAPPI method (1).* The aluminum test dishes were similar in construction to the General Foods test dish (2). All determinations were carried out in a tunnel having an air velocity of 500 ft. per minute with the air maintained at an average relative humidity of 87.5% and an average temperature of 87.6 deg. F. The average water-vapor-pressure difference between the atmosphere of the testing tunnel and the inside of the testing dishes was 28.0 mm. of mercury.

Method of controlling heat-sealing

The specially constructed heat-sealing mechanism was one previously employed in conducting heat-sealing studies of cellophane (3). It is the reciprocal type,

Results of this work indicate that the heat-sealing operation definitely impairs the water-vapor resistance of waxed papers. The extent of impairment by heat increases with the elevation of sealing temperature. A sealing temperature of 200 deg. F. is less destructive to water-vapor resistance than temperature of 325 and 450 deg. F.—the latter temperature is excessively destructive.

* Both of the Western Regional Research Laboratory (Albany, Calif.), Bureau of Agricultural and Industrial Chemistry, Agricultural Research Administration, U. S. Department of Agriculture.

* Numbers in parentheses refer to References appended.

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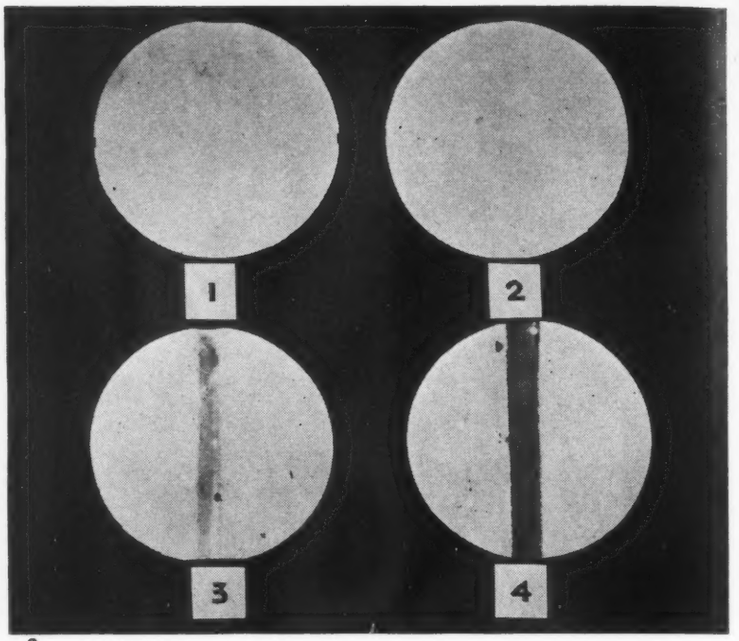

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1—Surface pyrometer which is used for determination of sealing temperatures. 2—The starch-iodide method indicates effect of heat-sealing on permeability of sealed areas of waxed papers. No. 1—control. No. 2—waxed paper sealed at 200 deg. F. No. 3—sealed at 325 deg. F. No. 4—sealed at 450 deg. F.

with electrically heated and thermostatically regulated sealing jaws, with sealing surface dimensions of 0.5 by 5.25 in., manually actuated for pressure and time of contact. The temperature of the sealing surfaces was accurately adjusted with the aid of a contact pyrometer (Fig. 1). A pressure of 10 lbs. per sq. in. of sealing surface was applied. Plain-surface, accurately aligned sealing jaws were used and two methods of heat treatment were applied, namely, simple "imprint" and single "overlap" seals. The "imprint" treatment permits measurement of the effects of temperature on the impairment of single sheets of paper waxed on two sides. The "overlap" seal, the type employed in bag making and package overwrapping, was included to ascertain the influence of sealing temperature on the efficiency of this type of seam.

Three sealing temperatures were used: 200, 325 and 450 deg. F. These temperatures were selected as the result of discussions with trade representatives and apparently cover the range of sealing temperatures applied commercially. The lowest temperature (200 deg. F.) was found to be the minimum that would produce an adherent bond with the papers used after one-second contact, which was the standardized contact time for all the vapometer tests. After each heat treatment, the sealed areas were rapidly sealed between cool brass plates.

Starch-iodide method for demonstrating porosity

As the application of heat and pressure to waxed papers results in varying degrees of impairment of water-vapor resistances, a means of visually demonstrating the extent of the changes was sought. Careful examination of heat-sealed areas revealed that surface continuity of the wax films is altered in all cases. The fact that increase in degree of porosity of these areas is in proportion to the elevation of temperature was demonstrated by a new method. The demonstration is based upon the fact that unimpaired paraffin coatings shed water or aqueous solutions while heat-modified areas rapidly absorb water. This condition permits the deposition of blue-black starch iodide in the absorbent areas.

The method of conducting this demonstration is as follows: The heat-treated sheet is first passed through a 1.0% aqueous iodine solution. This treatment results in the absorption of small amounts of iodine by the heat-modified absorbent area. After washing with water to remove surface iodine from the non-porous area, the sheet is then dipped in a freshly prepared 1.0% starch solution. The result is a deposition of blue-black starch iodide in the absorbent areas. The depth of blue-black color is greatest at the highest sealing temperature (Fig. 2). The test demonstrates the increased destruction of the wax film at high temperatures and emphasizes the importance of control of sealing temperature.

Practical overwrapping test

The three waxed papers were subjected to practical overwrapping tests, both by automatic wrapping mechanism and by hand. The machine sealing was carried out under commercial operating conditions, with an automatic overwrapping and heat-sealing mechanism. The sealing unit consisted of three electrically heated shoes designed to effect simultaneously the sealing of

the end folds and side seam of the package. Pyrometer readings indicated that the end-sealing shoes were considerably lower in temperature than the bottom shoe. The temperatures of the sealing shoes were adjusted to correspond as closely as possible to the sealing temperatures used in the vapometer tests. Owing to the ineffectiveness of the rheostat, it was only possible to approximate these temperatures. The temperatures were as follows:

Side shoes (end-sealing)	*Bottom shoe (side-sealing)*
210 deg. F.	240 deg. F.
300 deg. F.	340 deg. F.
390 deg. F.	440 deg. F.

The hand-sealing was carried out with the aid of a small electrically heated sealer equipped with a thermostatic control (Fig. 3). The temperatures of the sealing surface were adjusted to 200, 325 and 440 deg. F., as determined by surface pyrometer.

The 12-oz. paperboard containers were constructed from 0.018-gauge plain paperboard with outside dimensions of 5.25 by 4.0 by 1.75 in. They were the one-piece trunk type ordinarily used for packaging frozen foods. To assist in minimizing the barrier effect of the paperboard container, two $^3/_{16}$-in. holes were punched on two opposite sides of the containers in diagonal positions.

The desiccant employed was 8-mesh anhydrous calcium chloride contained in bags of cheesecloth fashioned from squares of the fabric and tied with string. One bag containing 85 grams of the desiccant was placed in each container (Fig. 4) and the overwrapping was completed with the automatic sealing and holding mechanism. Each package remained in contact with the sealing shoes for approximately four seconds before being ejected between the holding belts. The packages were weighed to plus or minus 0.01 gram and placed in the humidity tunnel. Daily weighings were made to determine the amount of water vapor that penetrated each package during a seven-day period. The data reported are based upon an average of seven determinations, including controls.

Discussion of results

The chart in Fig. 5 summarizes the effects of sealing temperatures on the impairment of wax (paraffin) coatings. The results indicate that the extent of impairment of waxed papers by heat increases with the elevation of temperature.

In all cases, seals or impressions made at 200 deg. F. were more effective in resisting water-vapor penetration than those made at 325 and 450 deg. F. However, at elevated temperatures, less destruction of water-vapor resistance occurred in the case of the highly calendered (transparent) sulphite paper. This suggests that the paraffin is more tightly held by a firmly rolled paper during the application of heat. In the case of the opaque sulphite paper (12 lbs. of wax per ream) a marked destruction of water-vapor resistance occurred at 325 deg. F. The permeability of seals or impressions made at 325 deg. F. on this paper was ten times as great

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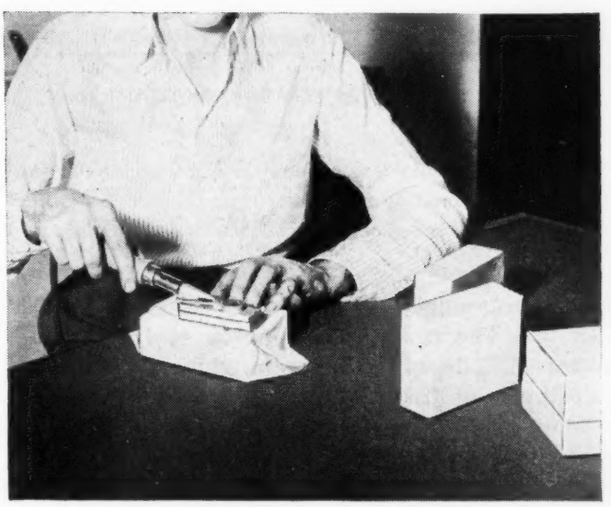

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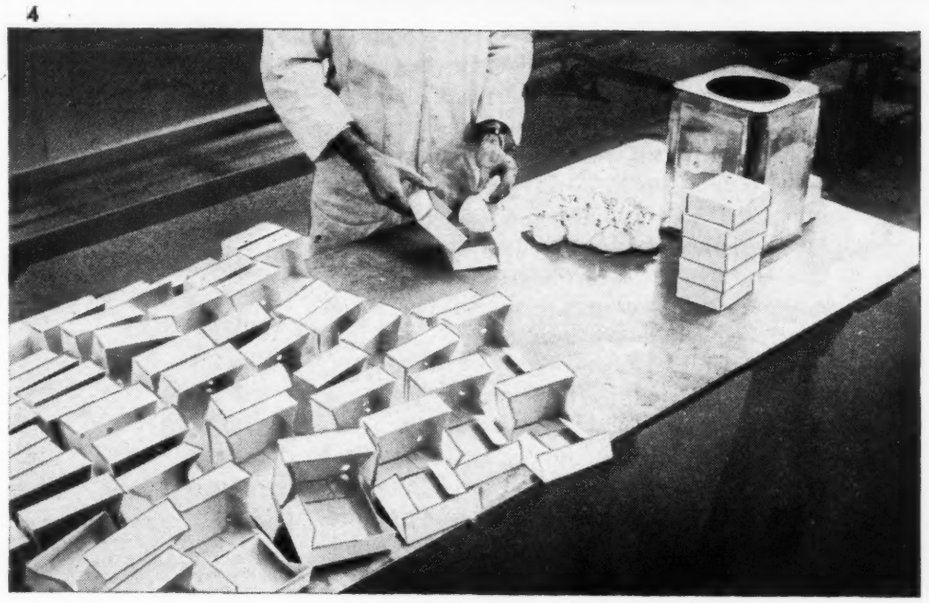
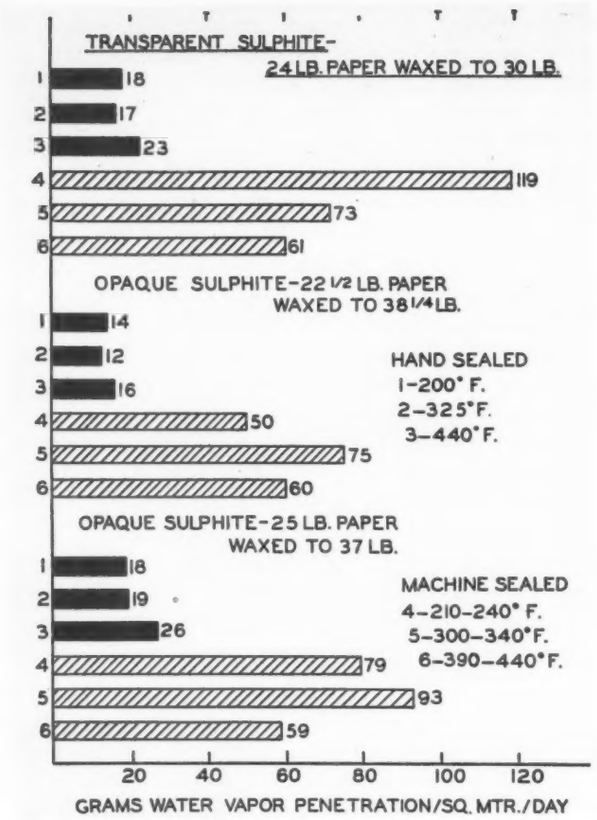


3—Hand heat-sealing operation on waxed-paper wrap.
4—Placing bags of calcium chloride desiccant in paperboard frozen food cartons, perforated for test purposes.



5—Effect of sealing temperature on water-vapor penetration as determined by vapometer tests (penetration calculated to total area of exposed surface—21.6 sq. in.)

as the permeability of seals or impressions made at 200 deg. F. The more heavily waxed opaque sulphite paper (15.75 lbs. of wax per ream) suffered even greater impairment at 325 deg. F., the permeability increasing seventeen-fold. On the other hand, only a 30% increase in water-vapor penetration occurred in the case of the highly calendered sulphite.

At a sealing temperature of 450 deg. F., greatly increased destruction of water-vapor resistance occurred in all three types of paper, but here again the highly calendered paper suffered less impairment than the ordinary sulphite sheet. In the case of the latter, the impairment was materially reduced by an increase in weight of wax from 12 to 15.75 lbs. per ream. These results emphasize the critical nature of sealing temperatures and indicate the necessity for accurately controlling the temperatures of heat-sealing surfaces.

Reference to the chart in Fig. 6 permits a comparison between controlled laboratory tests (Fig. 5) and machine-sealed overwraps of the same waxed papers. The effectiveness of carefully hand-sealed overwraps is demonstrated. The poor correlation between the controlled laboratory determinations and the practical overwrapping tests is due in part to the variable impairment of the wax surface films of machine-overwrapped packages and also to the uncontrolled leakages which are always prevalent at the corner end folds. The results emphasize not only the variation in efficiency of machine-sealed waxed papers but also the ineffective protection supplied by this method of packaging. The need for more effective methods of mechanical heat-sealing is emphasized by the improved results obtained by hand-sealed closures.

Conclusions

The results of this work indicate that the heat-sealing operation definitely impairs the water-vapor resistance of waxed papers. The extent of impairment by heat increases with the elevation of sealing temperature. A sealing temperature of 200 deg. F. is less destructive to water-vapor resistance than sealing temperatures of 325 and 450 deg. F. The latter temperature is excessively destructive. The tests show that machine-sealed overwraps of waxed paper are not as efficient in barrier effect as controlled hand-sealed overwraps. This indicates the necessity for improvement of mechanical heat-sealing mechanisms.

The starch-iodide impregnation method visually demonstrates the effect of varying sealing temperatures on the porosity paraffin-coated papers.

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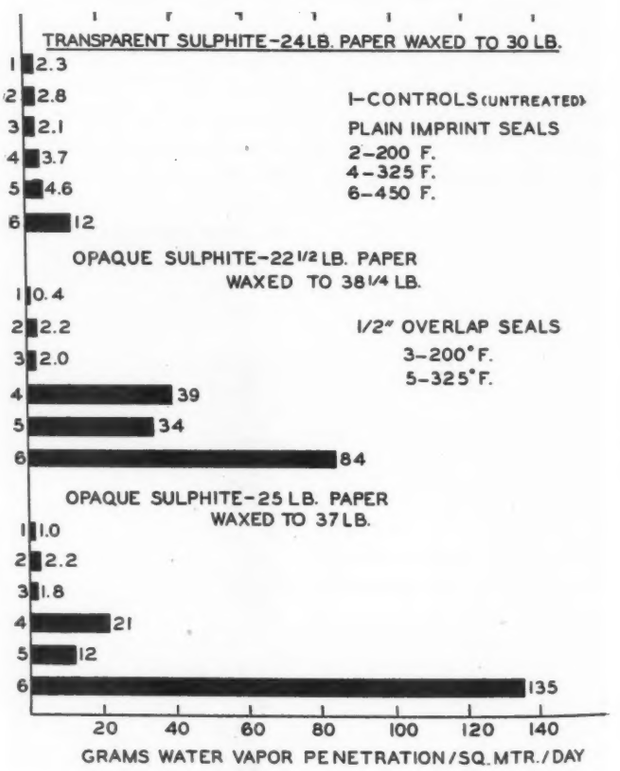


Standards for case liners

. . . 1. materials tested and methods of testing

*by B. W. Scribner, F. T. Carson and C. G. Weber**

An investigation was made for the development of improved specifications for materials used to line shipping cases so that the liners would give better service in overseas shipments of supplies, particularly those for our armed forces.

The sheetings were given various kinds of tests considered to have a bearing on their serviceability, such as strength, stretch, flexibility, resistance to puncture, scuffing, and permeation by water vapor and water. As a part of the work, an improved cabinet for making water-vapor permeability tests under accurately controlled atmospheric conditions simulating those of the tropics was developed. This was so designed that the test specimens were weighed inside the cabinet, thus obviating errors inherent in removing them for weighing.

Packages containing liners made of the same materials as the sheetings tested were subjected to simulated service conditions at a commercial testing laboratory. Correlation of the test data of the sheetings with their performance in the simulated service trials indicated that for the most satisfactory service, the case liners should be composed of sheets of kraft paper cemented together with asphalt, and that the important properties are: a real weight of paper and of asphalt, wet-tensile strength, stretch, resistance to tearing and puncture, and permeation by water vapor and water. Recommended requirements for these properties are included.

At the request of the Container Coordinating Committee, War Production Board, and with the assistance of funds from the Board's Office of Production Research and Development, the National Bureau of Standards participated in an investigation of flexible case-lining materials for development of improved specifications for such materials.

The project comprised mainly: (1) subjection of packed shipping cases containing the materials as case liners to simulated service conditions at the Package Research Laboratory, Rockaway, N. J.; (2) testing by the National Bureau of Standards of the materials from which the liners were made; (3) correlation of the results obtained at the two laboratories to determine the properties that the materials should have to function satisfactorily as case liners; (4) the formulation of recommended standards for the significant properties for use in purchase specifications.

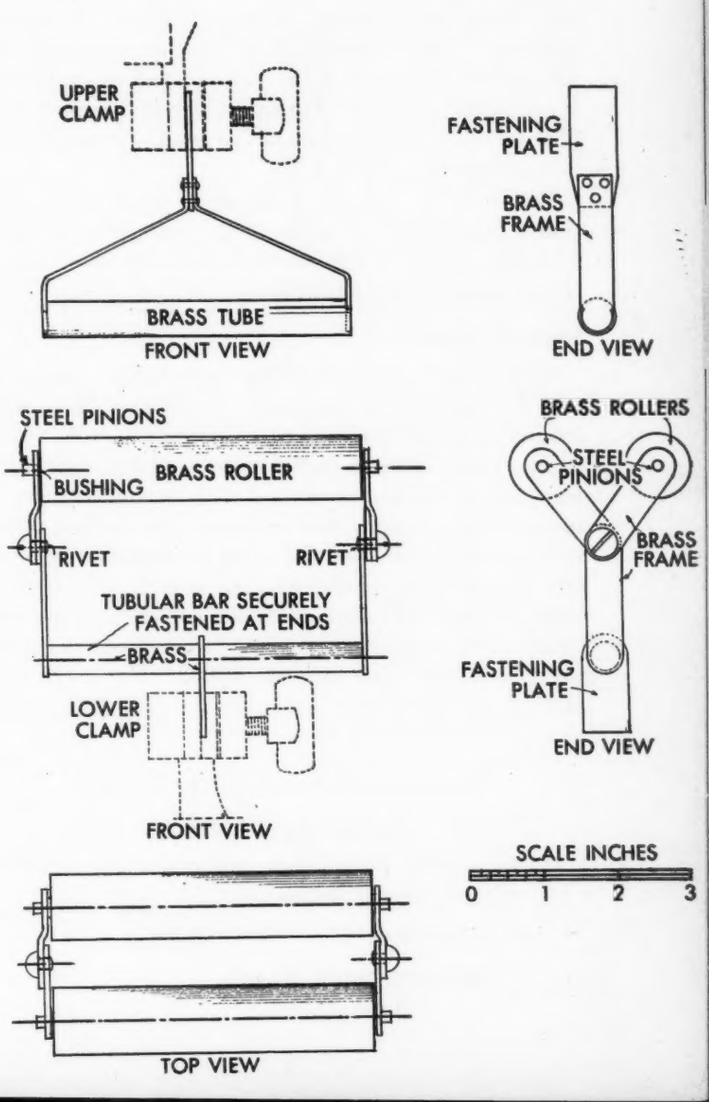
The project was carried out with the assistance of a Task Group, representative of manufacturers of case-lining materials and the Forest Products Laboratory, which acted in an advisory capacity. The Task Group was appointed by Mr. Henry A. Wolsdorf, Chairman of the Container Coordinating Committee. His invaluable assistance and that of the members of the Task Group[1] are gratefully acknowledged.

The tests at the Package Research Laboratory were made as follows: Standard wooden and fibre shipping boxes of different sizes were lined with the case-lining materials made into liners of one-piece construction for "satchel" closure. The large boxes were filled with

* All of the National Bureau of Standards, U. S. Department of Commerce, Washington, D. C.

[1] Mr. E. G. Mullen, Chairman, W. Ralston & Co., Inc.; Mr. C. E. Hrubesky, Forest Products Laboratory; Mr. F. F. Newkirk, American Reinforced Paper Co.; Mr. H. J. Driscoll, Union Bag & Paper Corp.; Mr. W. S. Seaman, Angier Sales Corp.; Dr. M. L. Downs, Thilmany Pulp & Paper Co.

1—*Diagram showing the details of the device used for testing the stiffness of various case-lining materials.*



2—*Taber abraser. The instrument used for determining resistance to scuffing of case-lining materials when dry.*

cartonized hollow steel cylinders and wooden blocks and the small boxes with wrapped hollow steel cylinders alone. The closure of the liner was folded over and sealed with a moisture-resistant adhesive. The boxes were then put through cycles of being tumbled in a revolving drum, dropped on a concrete floor, and bounced on a vibrator, with intermittent spraying with water, under both tropical and arctic temperatures. The boxes were opened on completion of the cycles and the contents examined for number of wet pieces, after which the liners were removed and examined for holes, scuffs or other damage. Detailed descriptions of these tests and accounts of the results obtained have been published. (1, 2, 3, 4)[2]

Following is a report of the tests made at the National Bureau of Standards, of the correlation of them with the results of the simulated service tests, and of the recommended standards.

Materials tested

Case-lining materials—The case-lining materials tested consisted of 31 samples. There were 24 asphalt-laminated kraft papers, made variously with plain paper, paper infused with asphalt, paper containing waxy materials, paper treated with melamine resin to improve its strength and resistance to scuffing when wet, and paper treated for mold resistance. Some of the papers were reinforced with strands of fibres or cords imbedded in the laminating asphalt. The other materials were made of various other kinds of sheetings. Detailed descriptions follow. The letters at the left are the sample designations. The weights are on a basis of 3,000 sq. ft.

Asphalt-Laminated Kraft Papers

Duplex Uncreped

M—One 40-lb. plain sheet, one 60-lb. sheet infused with wax resin compound.

D—One 60-lb. plain sheet, one 60-lb. sheet infused with asphalt.

J—One 50-lb. plain sheet, one 50-lb. sheet infused with asphalt.

S—One 50-lb. plain sheet, one 50-lb. sheet infused with asphalt; embossed after lamination.

F—Reinforced, plain 30-lb. sheets.

G—Reinforced, plain 30-lb. sheets.

Duplex Creped

V—40-lb. machine-creped sheets.

HH—40-lb. machine-creped sheets.

GG—One 30-lb. plain sheet, one 60-lb. sheet infused with wax-resin compound; creped after lamination.

K—One plain 60-lb. machine-creped sheet, one 60-lb. machine-creped sheet infused with asphalt.

T—One 60-lb. machine-creped sheet, one 60-lb. machine-creped sheet infused with asphalt.

BB—Two 50-lb. machine-creped sheets, one sheet treated for wet strength; wax applied to treated side.

C—Reinforced, one 45-lb. machine-creped sheet, one 75-lb. machine-creped sheet.

U—Reinforced, 35-lb. machine-creped, wet-strength sheets.

EE—Reinforced, 45-lb. machine-creped, wet-strength sheets.

Triplex Creped

E—One 30-lb. machine-creped sheet on one side; other sheets plain, 30 lb.

AA—One 40-lb. machine-creped outer sheet treated for mold resistance, two 30-lb. plain sheets.

CC—One 60-lb. machine-creped outer sheet infused with asphalt; two 30-lb. plain sheets.

B—All sheets 40 lb., outer sheets creped and infused with asphalt before lamination, center sheet uncreped.

A—All sheets 30 lb., creped diagonally while combining.

H—All sheets 40 lb., machine-creped and serrated.

O—40-lb. machine-creped sheets, outer sheets treated for wet strength.

DD—40-lb. machine-creped sheets, outer sheets treated for wet strength, one outer sheet wax treated.

W—All sheets 40 lb., creped and infused with asphalt before lamination.

Miscellaneous Materials

P—Duplex; uncreped, two 32-lb. cellulose-wadding sheets infused with asphalt.

Q—Duplex; uncreped, two 32-lb. cellulose-wadding sheets infused with asphalt; one side coated with asphalt.

R—Triplex; uncreped, three 32-lb. cellulose-wadding sheets infused with asphalt.

X—Lead foil laminated to one 30-lb. plain kraft sheet. Foil side coated with polyvinyl butyral, scrim cloth laminated to kraft side.

[2] Numerals in parentheses refer to references appended.

Z—Cloth, one side coated with vinyl resin.

FF—Duplex; one 40-lb. machine-creped kraft sheet, one 22-lb. cellophane sheet.

II—Triplex; two 40-lb. machine-creped kraft outer sheets, one 22-lb. cellophane inner sheet.

Base papers—It was thought that tests of base papers used in the manufacture of the kraft case-lining papers might, through correlation of the results with the results of the tests of the case-lining papers, yield information that would be of value to manufacturers in their choice of base papers.

Tests were made on 35 base papers used in the manufacture of 17 of the case-lining papers. The base papers were 15 plain and 9 creped laminating papers, 6 plain and 2 creped asphalt infusing papers, and 3 asphalt-infused papers. The basis weights were representative of the range generally used for laminated case-lining papers.

The following tests were applied to these papers, as far as the various kinds of tests are applicable to the different types of papers: weight per unit area and the thickness (the ratio of which yields density), folding endurance, tearing resistance, bursting strength, tensile breaking strength, air resistance, smoothness, time of oil permeation, amount of oil absorbed, acidity and kind and condition of fibres. Although the test values for the different base papers varied widely, there was no significant relation between the properties of the base papers and the properties of the case-lining papers. For this reason the test data for the base papers are not reported herein.

Methods of testing

Standard methods—The following tests were made according to the methods of the Technical Assn. of the Pulp and Paper Industry (TAPPI).[3] The Association's designations of the methods are included: Basis weight, T 410 m; tearing resistance, T 414 m; bursting strength, T 403 m; tensile breaking strength, dry, T 404 m; tensile breaking strength, wet, T 456m; stretch, T 457 m; water resistance, T 433 m; water-vapor permeability at 73° F. and 50% R.H., T 448 m; water-vapor permeability at 100° F. and 90% R.H., T 464 m; resistance to puncture, T 803 m; and acidity, pH, hot extraction, T 435 m.

The wet tensile strength was determined on samples after they had been immersed in water for 24 hours. Tearing tests could not be made on reinforced papers because of the interference of the reinforcing material.

As the apparatus for the puncture test is of comparatively recent development, it might be well to explain briefly that it measures the energy required to force a tetrahedral puncture head (simulating the corner of a box) completely through the test specimen. The rupturing force is provided by the release of a heavy pendulum from a horizontal position. As the pendulum swings down the puncture head, carried at the end of a curved arm attached to the pendulum and concentric with its bearing, is driven through the specimen. The energy thus absorbed in puncturing the specimen is indicated by a pointer on a dial. (5).

[3] Copies may be obtained from the Association at 122 East 42nd Street, New York 17, N. Y.

Special methods and apparatus—Following are descriptions of testing methods and apparatus for which no standards were available[4]:

The *stiffness test* was used as a means of determining the probable performance of the case-lining materials in the folding operations incident to forming them into liners and to closing the liners. Excessive stiffness is undesirable. The method consists in finding the load required to force the material between two rollers. An apparatus devised for the purpose by M. L. Downs was modified to permit its use in a standard type of paper tensile strength testing instrument.

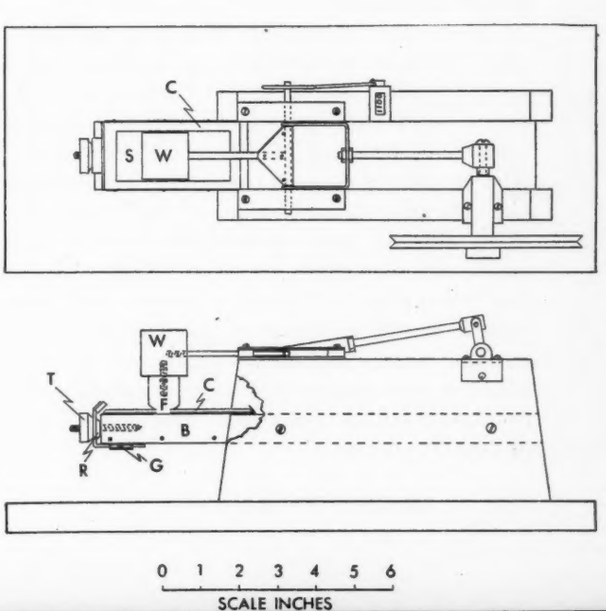
The device, illustrated in Fig. 1, consists of two stirrups. A single stirrup, the cross-bar of which is a $^1/_2$-in. metal tube, is fastened in the upper clamp of the tensile tester. An inverted, double stirrup, which is fastened in the lower clamp of the tensile tester, has two $^7/_8$-in. rollers, separated by a distance of $^3/_4$ in. The tensile tester, with pendulum weights removed, is calibrated over the desired range by hanging small weights to the upper clamp (with the single stirrup clasped in place).

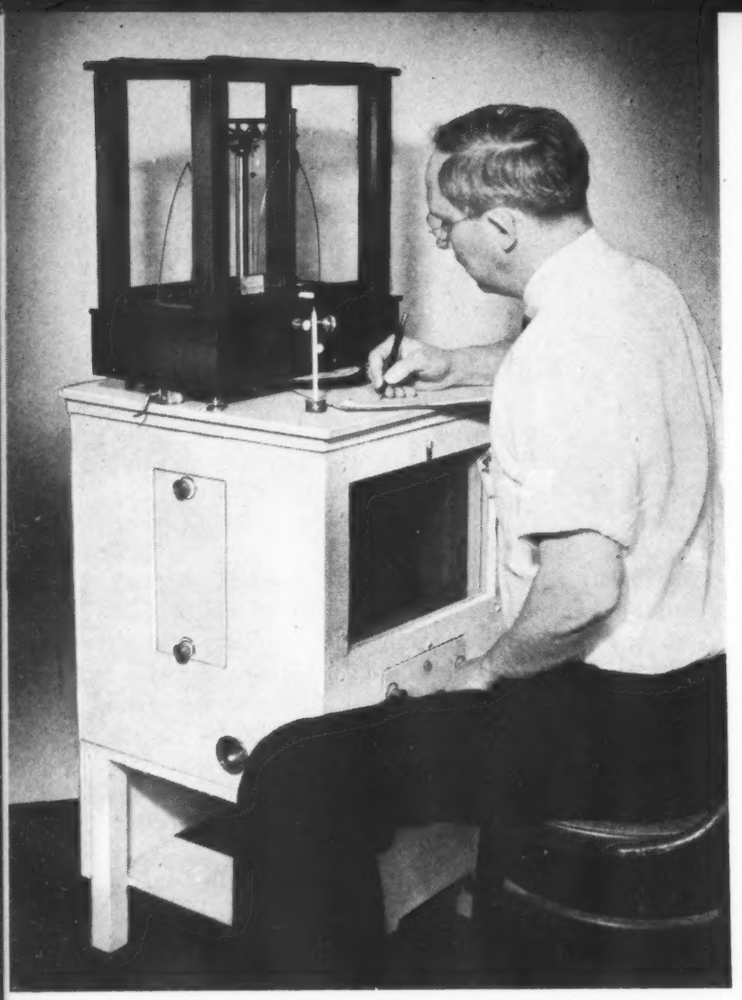
To make a test, the lower clamp of the tensile tester is run up until the tubular cross-bar of the upper stirrup passes between the rollers of the lower stirrup and comes below them. A specimen, 4 in. square, is then slipped under the rollers of the double stirrup and over the tubular cross-bar of the single stirrup. The lower clamp is then run down, as in making a tensile test, the specimen being bent and pulled between the rollers of the double stirrup. The force required to do this, which is determined from the scale reading and the calibration of the tensile tester, is used as a measure of the relative stiffness of the material tested.

The *scuff test* was used as a measure of the probable

[4] The apparatus for creasing test specimens, for making the stiffness tests and the wet-rub tests, and the cabinet for water-vapor permeability at high temperature and humidity, were developed by F. T. Carson and V. Worthington of the Bureau staff.

3—*Details of apparatus used for determining the resistance to scuffing of case-lining materials when wet.*





4—Special cabinet used for testing for permeability to water and water-vapor under tropical weather conditions.

resistance of the materials to wear caused by rubbing against the walls and contents of containers. The test was made with the Taber abraser (6) and with the wet-rub tester (7) developed at the Bureau.

The Taber abraser, shown in Fig. 2, is in common use for testing many sheet materials other than paper for resistance to abrasion. The apparatus consists of a horizontal motor-driven turntable upon which the test specimen is attached, and two weighted parallel arms, each carrying a special abrasive-filled rubber wheel which rotates on the specimen under a given load. A load of 1,000 grams was used for these tests. The two wheels revolve in opposite directions and exert a combined abrasive, compressive and twisting action over a circular path. The turntable was rotated until the surface of the material was just completely removed, with continuous brushing of the debris from the specimen. The amount of material removed was determined by the difference in the weight of the paper before and after abrasion, and was calculated to revolutions per centigram of material removed. Only a dry abrasion test was made; satisfactory results could not be obtained on wet materials of this kind because of their various water-resistant components. Even the dry abrasion test could not be applied satisfactorily to the cellulose wadding materials because of the large amount of asphalt present.

The wet-rub tester, shown in Fig. 3, has a metal plate on which the test specimen *C* is clamped and rubbed by a chrome-plated rounded end of a cylinder *F* projecting from a horizontally reciprocating member that is weighted. For testing the case-lining materials, a load of 5 lbs. was used. The number of double rubs required to wear a hole through a specimen wetted with an excess of water is recorded. The abrading surface of this apparatus is not suitable for making dry tests.

The water-resistance and the water-vapor permeability tests were made on both uncreased and creased specimens. Tests on *creased* specimens are important because of the creasing of case-lining materials in forming and closing the case liners and because of the load on the creases after the container is filled. The materials were creased at low temperature because the case-lining operations are often done with very cold material and asphalt has a greater tendency to crack on creasing as its temperature is lowered.

The test specimens were exposed, before creasing, for at least two hours to air having a temperature of approximately 40 deg. F. and a relative humidity of approximately 60%. The conditions were chosen by the Task Group as being convenient to use and suitable for the purpose. The test specimens were then transferred to an insulated container from which they were taken one at a time for creasing. They were creased in a cabinet maintained at 40 ± 2 deg. F. and having arm holes fitted with sleeves to permit manipulation of the creasing apparatus. The specimens were 4 in. square and they were creased on two diagonals, under a pressure of 2.36 lbs. per in. of crease.

Creasing apparatus

The creasing apparatus is illustrated in Fig. 5. A lower plate *P*, hinged at *A*, is lifted by a handle *H*, until it contacts and lifts the upper plate *R*. Attached to the upper plate is a weight *W* of such size that it and the upper plate together apply the required load per inch of crease. The upper plate is held in position by a guide until it is lifted. A stop *S* limits the movement. A square of the paper to be creased is first wrapped along its diagonal around a $^3/_4$-in. round rod (wood preferably), with diagonally opposite tips held together; then the rounded section along the diagonal is centered between the plates, and creased by depressing the handle *H*. It is held in position shown by dotted lines by the catch *C* for the required time necessary to crease.

For making the *water-vapor permeability* tests, cells $3^3/_4$ in. in diameter and about $^3/_8$ in. deep were used. A flanged rim, forming a shallow groove, provides a means of embedding the perimeter of the specimen in the wax used to seal the specimen to the dish, leaving a free area of 50 cm.^{2} through which water vapor passes from the exterior to the desiccant within. Each dish holds about 15 grams of 8-mesh anhydrous calcium chloride. The dishes were formed from disks of an-

nealed sheet aluminum 0.020 in. thick by pressing them between steel dies.

The cells were first exposed and weighed at intervals in an air-conditioned room maintained at 50 ± 2% relative humidity and 73 ± 3.5 deg. F., until they reached a steady rate of gain. They were then transferred to a cabinet especially designed to maintain the air within it at 90 ± 1% relative humidity and 100 ± 0.5 deg. F., and to obviate the necessity of removing the cells for weighing them. The latter feature gives improved accuracy in the determinations and reduces considerably the time required for weighing.

Cabinet for testing permeability

The cabinet illustrated in Fig. 4 consists of a metal box, 14 by 14 by 14 in., within an insulated box, a 1-in. air space separating the two. Air is circulated in this interspace by a centrifugal fan in the bottom of the cabinet. A heater of about 80 watts capacity and a thermoregulator in the interspace keep the envelope of circulating air at the required temperature. The inner box is heated only by transfer of heat from the air in the interspace. In the bottom of the inner box are pans containing a saturated solution of mono-ammonium phosphate or of potassium nitrate. A small fan blowing down on the pans circulates the air in this enclosure and keeps it at a uniform humidity characteristic of the relative vapor pressure of the solution. A port is shown through which access is had to the pans and another in the side gives access to the test cells. Each port is sealed by an insulated, rectangular plug held against a rubber gasket.

The test cells are hung by means of hooks to a notched disk in the top of the inner box. A rod, hanging from the left arm of the balance, passes through a hole in the floor of the balance and through an aperture in the top of the cabinet, and ends in a hook designed to engage the hooks supporting the test cells. The rod is divided between the balance and the top of the cabinet, the two parts being joined by a tab sliding in a sleeve. When the crank, at the left side of the balance, is rotated, a mechanism lifts the weighing hook, together with the test cell just below it, locks the two parts of the weighing rod together, and leaves the test cell freely suspended from the balance arm ready to weigh. The disk supporting the test cells is fastened by means of a shaft to a numbered disk on top of the cabinet, projecting from underneath the balance. The number on the numbered disk opposite the pointer is the number of the disk in the weighing position. Any number is selected by turning the disk. An interlocking device holds the disk so that it cannot be turned while a test cell is being weighed. The cabinet has a capacity of 60 cells of the size used.[5]

It was found that 48-hour intervals of weighing, over a period of about two weeks, were satisfactory in arriving at a steady rate of transfer of moisture through the specimens.

[5] It is proposed to give further details of this cabinet together with additional data obtained with it in a later publication.

The possibility of exudation, or *bleeding* at high temperature of asphaltic, waxy or oily substances used to impart water resistance and other properties to case-lining materials is of importance with respect to damage from this source that might occur to the contents of shipping cases. Asphalt stains, of course, do the most serious damage.

Considerable trouble from this source could be avoided by using asphalt having a very high melting point, but such asphalt would also tend to crack when cold, at a higher temperature than an asphalt with a lower melting point. For this reason, in choosing a temperature at which to test for bleeding it is necessary to use as low a temperature as is consistent with the highest temperature to which shipments may normally be exposed in the tropics. It appears that this would occur in the holds of ships where maximum temperatures around 145 deg. F. have been recorded. Accordingly, 150 deg. F. was chosen as the proper testing temperature.

Test specimens were sandwiched between sheets of white paper, heated at this temperature for 5 hours under a pressure of 72 lbs. per sq. ft., then the sheets of white paper were examined for kind and degree of staining.

(Test data, correlation of test data for case-lining materials with performance of case liners made from them, and recommended standards will be covered next month in the second and concluding article of this series.)

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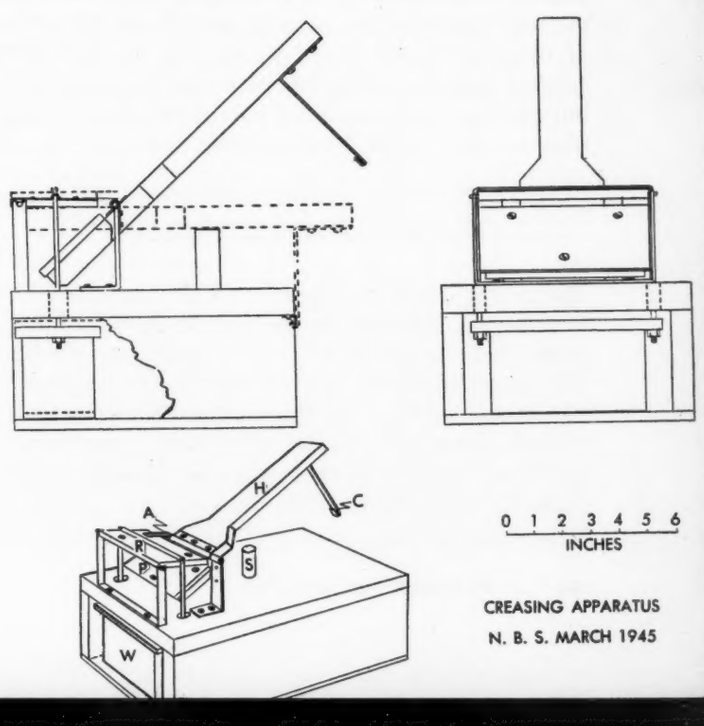


Propionate treatment of parchment to inhibit mold*

by J. C. Olson, Jr., and H. Macy†

The control of mold growth in the interior and on the surface of butter offers a serious problem. A larger part of the moldy butter difficulty has manifested itself in surface discoloration. This may be accounted for by the assumption that sufficient attention has not been given to the prevention of air-borne contamination of butter surfaces. Such contamination may occur at various stages of manufacture, probably the most important of which is during the packing and printing operations. One approach to the control of surface mold growth on butter is the treatment of parchment paper that comes into contact with butter surfaces. Certain chemicals (5, 7, 9, 11, 12, 14)[1] have been employed or recommended for this purpose with the hope that retention of these agents by the paper, when in contact with the butter surface, would serve to inhibit and possibly prevent the growth of mold.

Salt treatment of tubs, liners and wrappers has been a time-honored method of mold control. Its greatest application has been to salted butter, on which, incidentally, mold is less of a problem than on unsalted butter. Various procedures for its use have been recommended (1, 2, 3, 4, 6, 8, 10, 11, 16), all utilizing a concentrated salt solution for the treatment of parchments.

In a preliminary study, Macy and Olson (12) found parchment paper treated with aqueous solutions of sodium and calcium propionate quite effective in restraining mold growth on butter heavily seeded with mold spores before wrapping. Calcium propionate was found to be more effective than the sodium salt. Both were more effective on salted than on unsalted butter. Ingle (9) reported that a 6% calcium propionate solution or a 12% solution of sodium propionate greatly inhibited mold growth on the surface of unsalted butter stored at 60 deg. F. and 100% relative humidity. He reported that dry propionate-impregnated wrappers when wetted previous to wrapping gave better results than using them dry. In our experience quite the opposite has occurred. Thomsen (15) observed that yeast and mold counts on the surface of butter packed in tubs or boxes lined with parchment dipped in 12% propionic acid were reduced about 20%.

Since these propionate compounds are apparently innocuous and are natural constituents (13) of butter, and other dairy products, they seemed worthy of more intensive investigation. This paper is an extension of our preliminary study in determining the effectiveness of the propionates in inhibiting mold growth on butter surfaces wrapped in parchment treated primarily in calcium propionate solutions. It became evident early in the work that calcium propionate was the superior salt for this purpose. Studies pertaining to the active agent responsible for the inhibiting effect of the propionates will be the subject of another report.

* Reprinted by permission from *Journal of Dairy Science*, 28 (Sept. 1945), pp. 701-710.

† Of the Division of Dairy Husbandry, University of Minnesota.

[1] Numbers in parentheses refer to References appended.

This study of the effect of propionate-treated parchment in inhibiting mold growth on the surface of butter will provide many clues to the development of a general purpose mold-inhibiting wrapper, which currently is occupying packaging research in several fields.

Methods

Quarter-pound prints of a 93-score commercial brand of unsalted butter were cut in half, transversely, and the one-eighth pound prints were used in these studies.

In most of the work, butter surfaces were artificially contaminated by spraying a mold-spore suspension of a known species on the surfaces by means of an atomizer. The suspensions were prepared by scraping mycelium and spores from an agar plate or slant and dispersing this material in sterile distilled water. Spores predominated in most cases and for the sake of brevity, the suspensions are called "spore suspensions."

Immediately after contamination, the prints were wrapped by hand with parchment paper which had been immersed in propionate solutions of various concentrations prepared on a weight-volume basis. For example, the preparation of an 8% solution of calcium propionate consisted of weighing out eight grams and making it up to a total volume of 100 milliliters with distilled water.

Throughout this study, storage conditions were maintained which would be as severe as any which might be encountered in regular commercial trade channels. To obtain such a condition, ordinary household refrigerator humidors were used for storing the butter. The relative humidity was maintained at approximately 100% and the temperature at 45 deg. to 48 deg. F. The samples were observed at various intervals depending on conditions of the experiment.

Experimental

On the basis of previous results there seemed to be little advantage in using concentrations of calcium propionate above 10% for the treatment of parchment butter wrappers to prevent subsequent mold growth

on the surface of salted or unsalted butter during storage. However, preliminary studies showed that lower concentrations in acidified solution could be used and approximately the same results obtained. A comparison of the effect of these solutions on several species of mold was made.

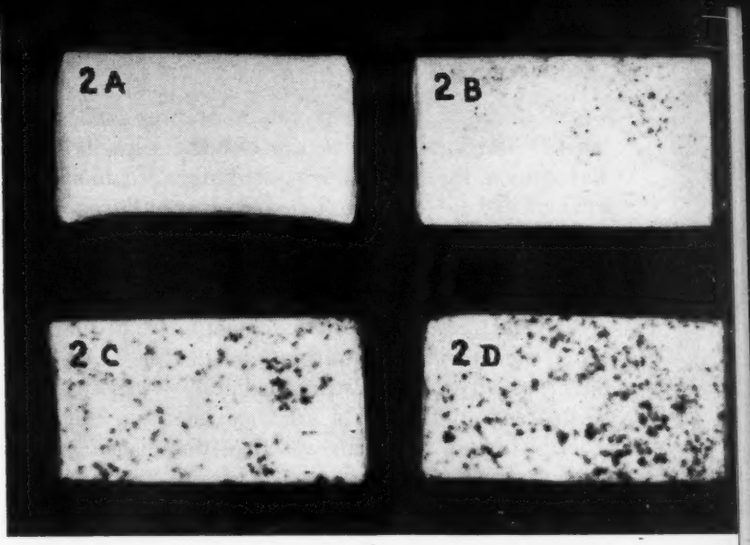
The following solutions were prepared: (1) 10% calcium propionate pH 8.3; (2) 10% calcium propionate pH 5.5; (3) 5% calcium propionate pH 7.9; (4) 5% calcium propionate pH 5.5; (5) 5% calcium propionate pH 4.5; (6) control (sterile distilled water). Lactic acid was used to acidify solutions 2, 4 and 5. The pH of solutions 1 and 3 was not adjusted.

All solutions were heated to 175 deg. F before use. Preliminary trials revealed that heating propionate solutions to 180 deg. F. did not reduce their effectiveness in inhibiting mold growth. Likewise no significant difference was noted between the pH of the solutions before and after heating.

Spore suspensions were made using the following species: (1) *Hormodendrum cladosporiodes;* (2) *Alternaria tenuis;* (3) *Stemphylium congestum;* (4) *Phoma betae;* (5) *Cladosporium sp.;* (6) *Penicillium expansum;* (7) *Aspergillus niger.*

After spraying the surfaces, the prints were wrapped with sterile parchments which had been soaked in the various propionate solutions for at least five minutes. Each lot of butter, sprayed with a particular species, was stored separately in a humidor and all prints were examined every day. A triple thickness piece of cheesecloth was placed beneath the cover of each humidor and kept moist for the purpose of maintaining a saturated atmosphere during storage. The results of this experiment are shown in Table I. To conserve space the data showing inhibition of *A. tenuis* and *Phoma betae* are not included. Prints sprayed with these species remained mold-free until 24 days storage, when scanty growth appeared on a few prints. However, no growth was evident at that time on prints wrapped with the 5% acidified solutions. In almost every case the acidified 5% calcium propionate solutions were equal or superior to the 10% calcium propionate solutions in preventing surface molding. The exceptions were: (1) *Cladosporium sp.* 10% acidified and, (2) *Aspergillus niger* 10% unacidified solution. It may be observed that considerable difference existed between species with respect to their resistance to the inhibitory effect of various calcium propionate solutions.

During the course of these investigations, samples of dry propionate-impregnated parchment, later placed on the market under the trade name of "Mycoban" impregnated parchment, were submitted for study. Another firm also submitted several samples of parchment impregnated with a different product thought to be a mold-growth inhibitor. This product is designated as "X." Several trials were made to determine their effectiveness in inhibiting surface mold growth when used for wrapping butter. Figures 1 and 2 show representative prints from these trials. From



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Appearance after one week's storage at 50 to 55 deg. F. of representative prints of unsalted butter sprayed with a mixed mold spore suspension and wrapped with Mycoban impregnated parchment: (2a) butter wrapped with dry Mycoban impregnated paper; (2b) wrapped with Mycoban impregnated paper dipped in water before wrapping; (2c, and 2d) wrapped with impregnated paper immersed in water for 2 and 5 min., respectively, before wrapping.

Fig. 1 it is quite apparent that "Mycoban" impregnated paper offered little protection when treated in water before use. Under such treatment the propionate leaches from the paper rapidly, leaving an insufficient concentration to subsequently inhibit growth. The storage temperature in this case was five to ten degrees higher than in other trials and growth appeared more rapidly.

Figure 2 shows the effectiveness of either the 10% or acidified 5% calcium-propionate-treated parchment. The wetted Mycoban and "X" impregnated parchments provided little protection; in fact, after ten days storage these prints showed abundant visible mold growth.

One of the criteria for the use of any substance as a mold inhibitor for butter should be that it cause little or no deleterious effect on flavor. The effect of sodium-propionate-, calcium-propionate- and acidified calcium-propionate-treated wrappers on the surface flavor of butter was determined.

One-eighth-pound prints of 93-score unsalted butter, two for each solution and for each period of observation, were wrapped with parchment immersed in various solutions of sodium propionate and calcium propionate. The prints were examined after one day, one week, two weeks and three weeks storage in a commercial storage butter room. The storage temperature varied from 39 deg. to 48 deg. F. A Federal butter judge examined all prints and his observations on flavor are recorded in Table II.

Only the surface of the butter was judged. Throughout the entire storage period, butter wrapped with parchment treated in the 5% acidified calcium propionate solution showed the least change in flavor. These prints were very similar to the controls after one

week; however, after two weeks the superiority in flavor over the controls was striking. No mold was evident and the characteristic old or aged flavor which was so prevalent in the control prints was entirely absent. After three weeks, a slight aged flavor was noted.

The butter wrapped in parchments treated in the other calcium propionate solutions all showed a bitter flavor which was noticed immediately on tasting but dissipated rapidly, yet a puckery sensation lingered. This bitterness and puckery effect diminished as the storage period advanced.

The butter wrapped in parchment treated in the sodium propionate solutions all possessed a sweetish flavor very similar to that of neutralized sweet cream. This flavor appeared to increase in intensity with storage. The butter wrapped with the 10% sodium-propionate-treated wrappers showed age at two weeks and possessed the poorest flavor of any after two and three weeks storage.

Discussion

The results of other trials made to determine the effectiveness of sodium chloride–sodium propionate and sodium chloride–calcium propionate solutions, showed little advantage in using a mixture of the two salts over the straight sodium chloride solution when salted butter was wrapped. The use of either propionate, however, was more effective in inhibiting mold growth than a saturated sodium chloride solution.

TABLE I. THE EFFECT OF PARCHMENT TREATED IN CALCIUM PROPIONATE SOLUTIONS AT VARIOUS pH LEVELS ON THE GROWTH OF SEVERAL SPECIES OF MOLD ON THE SURFACE OF UNSALTED BUTTER

Calcium propionate %	*pH*	*Amount of growth after*							
		8 days	*10 days*	*12 days*	*14 days*	*16 days*	*18 days*	*20 days*	*24 days*
					Hormodendrum cladosporioides				
10	8.3	3−	3−	3−	3−	3−	3−	1−2++	3++
10	5.5	3−	3−	3−	3−	3−	1−2+	1−2++	1−2++
5	7.9	3−	3−	3−	3−	1−2+	3+	3+	3++
5	5.5	3−	3−	3−	3−	3−	3−	3−	3−
5	4.5	3−	3−	3−	3−	3−	3−	3−	3−
Control	...	3−	3−	3+	3++	3++++	3++++	3++++	3++++
					Cladosporium species				
10	8.3	3−	3−	3−	3−	3+	Discarded	.....	.....
10	5.5	3−	3−	3−	3−	3−	3−	3−	2−1+
5	7.9	3−	3−	3−	2−1+	3+	Discarded	.....	.....
5	5.5	3−	3−	3−	3−	3−	3−	3+	3+
5	4.5	3−	3−	3−	3−	3−	3−	3−	3−
Control	...	3−	3++	3+++	3++++	Discarded	....	.....	.....
					Stemphylium congestum				
10	8.3	3−	3−	3−	3−	3−	2−1+	3++	3+++
10	5.5	3−	3−	3−	3−	3−	2−1+	1−2++	3++
5	7.9	3−	3−	3−	3+	3++	Discarded	.....	.....
5	5.5	3−	3−	3−	3−	3−	2−1+	3+	3+
5	4.5	3−	3−	3−	3−	3−	3−	2−1+	2−1+
Control	...	3−	3−	3+	3+	3++	Discarded	.....	.....
					Penicillium expansum				
10	8.3	3−	3−	3−	3+	3++	Discarded	.....	.....
10	5.5	3−	3−	3−	3+	3++	Discarded	.....	.....
5	7.9	3−	3+	3+	3+	3++	Discarded	.....	.....
5	5.5	3−	3−	3−	3+	3++	Discarded	.....	.....
5	4.5	3−	3−	3−	3+	3++	Discarded	.....	.....
Control	...	3−	3+	3++	3++	3++	Discarded	.....	.....
					*Aspergillus niger**				
10	8.3	3−	3−	3−	3−	3−	3−	3−	3−
10	5.5	3−	3−	3−	3−	3−	3−	3+	3+
5	7.9	3−	3−	3−	1−2+	3+	3+	3+	3+
5	5.5	3−	3−	3−	3−	3−	Not examined	1−2+	1−2+
5	4.5	3−	3−	3−	3−	3−	Not examined	3+	3+
Control	...	3−	2−1+	3+	3+	3+	3+	3+	3+

NOTE: − = No visible growth; + = Scanty growth; ++ = Moderate growth; +++ = Abundant growth; ++++ = Luxuriant growth. The number followed by symbols may be interpreted for example as follows: 3+ means that all three of the samples showed scanty growth; 2−1+ means two samples showed on growth while one showed scanty growth. * All growth consisted of very scant white mycelium which was evident only on very close examination.

TABLE II. THE SURFACE FLAVOR OF UNSALTED BUTTER AFTER WRAPPING WITH PARCHMENT TREATED IN SOLUTIONS OF SODIUM PROPIONATE AND CALCIUM PROPIONATE AFTER STORAGE AT 39 TO 48 Deg. F.

Description of solutions	*Comments after one day*
10% Na	Slight sweet and bitter. Not objectionable
12% Na	Slight sweet and bitter. Not objectionable
14% Na	Slight sweet and bitter. Not objectionable
10% Ca	Slight sweet and bitter. Not objectionable
12% Ca	Slight sweet and bitter. Not objectionable
14% Ca	Objectionable bitter taste
*5% Ca	Very slight bitter. Not objectionable. Very similar to control
Control	No change
	Comments after one week
10% Na	Same as after one day
12% Na	Same as after one day
14% Na	Same as after one day
10% Ca	Same as after one day
12% Ca	Same as after one day
14% Ca	Same as after one day
*5% Ca	Same as after one day
Control	No change
	Comments after two weeks
10% Na	Definitely aged
12% Na	Sweet flavor similar to neutralized sweet cream. Objectionable
14% Na	Sweet flavor similar to neutralized sweet cream. Objectionable
10% Ca	Same as after one day
12% Ca	Bitter. Objectionable
14% Ca	Bitter. Objectionable
*5% Ca	Same as after one day
Control	Moldy and definitely aged
	Comments after three weeks
10% Na	Definitely aged
12% Na	Same as after two weeks. Slight age
14% Na	Same as after two weeks. Slight age
10% Ca	Slight bitterness. Slight age. Not objectionable
12% Ca	Bitterness less intense than after two weeks
14% Ca	Bitterness less intense than after two weeks
*5% Ca	Very slight age
Control	Moldy and definitely aged

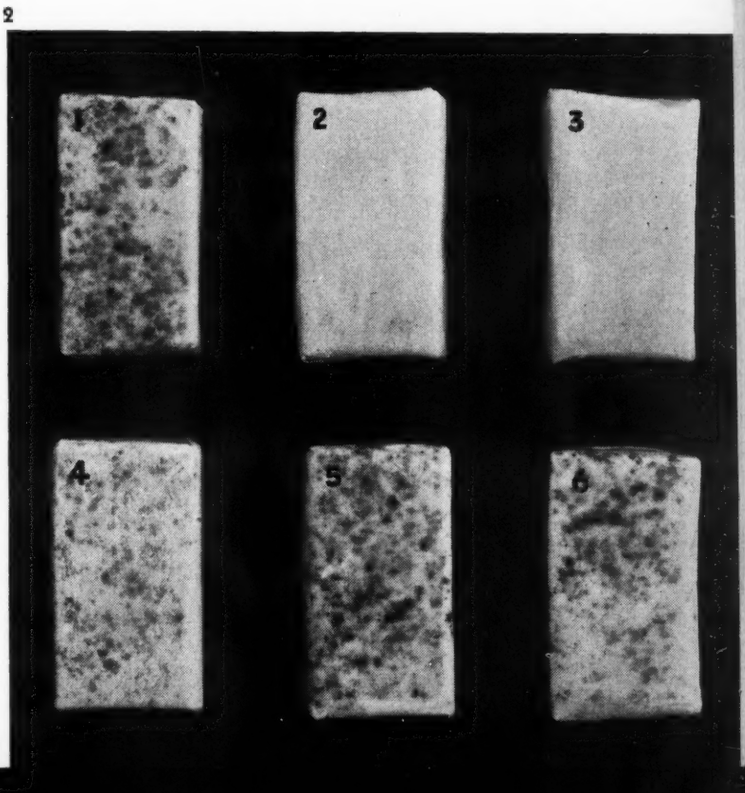
* 5% calcium propionate solution was acidified to pH 5.5 with lactic acid.

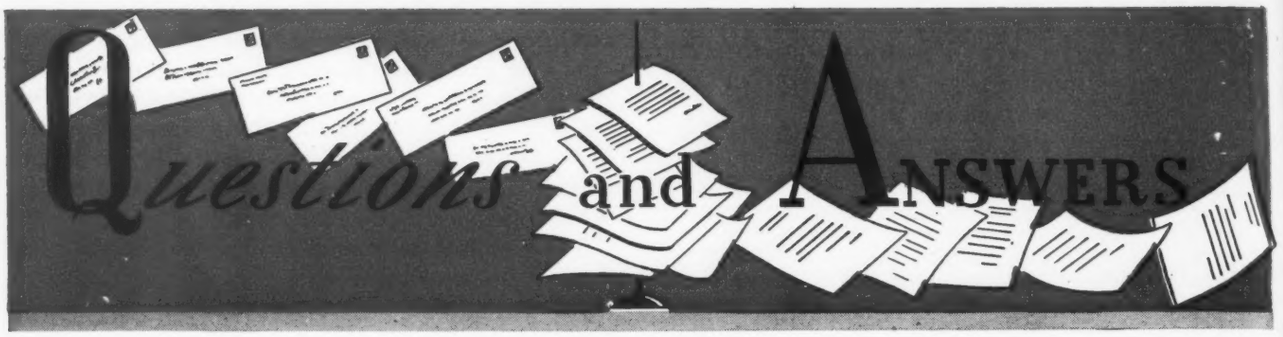
Studies were also made to determine protection provided by propionate-treated wrappers for butter prestored at −10 deg. F. for one, two and three months, and subsequently held at 40 deg. to 50 deg. F. The effect of low-temperature pre-storage did not prevent subsequent protection from mold growth on storage at high temperature.

With respect to the flavor studies presented, unsalted butter wrapped in parchment treated in a 5% calcium propionate solution at pH 5.5 showed marked superiority in keeping quality, as judged by surface flavor, than controls or other prints wrapped in parchments treated in unacidified solutions of higher concentration. All controls showed mold growth and flavor deterioration after two weeks. The butter was not artificially infected, but was from a fresh 93-score commercial lot, graded under the Federal grading system and printed immediately after grading. The prints were selected at random within a few hours after grading. The results of this study clearly show the lack of proper methods of mold control by the manufacturer of that butter, as well as the effectiveness of calcium propionate on keeping quality.

The experimental conditions under which these investigations were made were extremely conducive to rapid mold growth. This was particularly true of humidity conditions. The question was raised early in this work as to why mold growth was not uniform over the entire surface of the prints wrapped in treated parchments. Mold development on the controls was uniformly present over the surface. In the majority of instances where the data indicate scanty growth, only one or two spots of mold was present. Further it was observed that not infrequently one or two of the prints would remain free of visible mold for a longer period than others of the same group and in some instances would remain mold-free for the entire period of observation. Perhaps such lack of uniformity of growth may be explained by the fact that quarter-pound prints were (1) cut into eighths by hand which involved consider- (*Continued on page 196*)

Appearance after 18 days' storage at 45 deg. F. of representative prints of unsalted butter sprayed with a spore suspension of H. cladosporioides and then wrapped with parchment as follows: (1) control—non-treated parchment immersed in sterile water; (2) parchment immersed in 10% calcium propionate solution; (3) parchment immersed in 5% calcium propionate solution acidified to pH 5.5; (4) Mycoban impregnated parchment immersed in sterile water for 5 minutes before wrapping; (5) 1% "X" impregnated parchment immersed in sterile water for 5 minutes before wrapping; (6) 5% "X" impregnated parchment immersed in sterile water for 5 minutes before wrapping.





Improved tube-type dye package

QUESTION: As manufacturers of powdered dyes we ship many of our packages to South America for consumer use. We have been using a kraft bag in an asphalt laminated fibre tube with metal ends. This is unsatisfactory for several reasons. First, it means double packaging and we would like to put the dye directly in a tube without the bag; secondly, there is chemical reaction between the dye and the fibre board which causes color changes in the dye and caking on the side walls. Can you suggest an improved package of a tube type for our product?

ANSWER: It would appear that your entire difficulty is due to the fact that the asphalt laminated fibre tube with a kraft inner bag is not sufficiently moistureproof to protect your product properly. You probably have some discoloration and caking in the kraft bag but this does not render the product unusable. When the dye goes directly into the tube, the moisture pick-up is greater and it is difficult for the consumer to remove the dye. With the proper specification for the fibre wall of the tube there is no reason why you cannot package your product directly in the tube.

The side wall of such a moistureproof fibre tube should be made of two or three plies either convolutely or spirally wound. The board used for this construction should be a laminated board incorporating glassine wall laminant. The specification, finish and thickness of the board will depend upon your requirements for inside color, appearance, structural strength and similar considerations. The board, however, should be well finished on the side on which the lamination is made and the lamination should be made by applying the adhesive to the glassine, cooling and combining to the board with pressure and slight heat.

The convolute or spiral body of two plies of such board will, in all probability, be sufficient in moistureproofness for your product, but if there is any question about the protective requirements you may need or for areas of extraordinary humidity, additional protection can be obtained by using three plies of such construction. A fibre can made this way will have the additional advantage that the glassine will make a very attractive and smooth inside surface which will not react in any way to the dye. You should, however, be sure that fibre cans made in this manner are provided with a tight-fitting friction plug, as this is the best closure for reducing moisture ingress.

Packaging materials for fresh produce

QUESTION: We are seeking information on the best type of containers to use in transporting fresh blueberries. Also, we would like to know if there are packing materials that would assist in preserving perishable fruit.

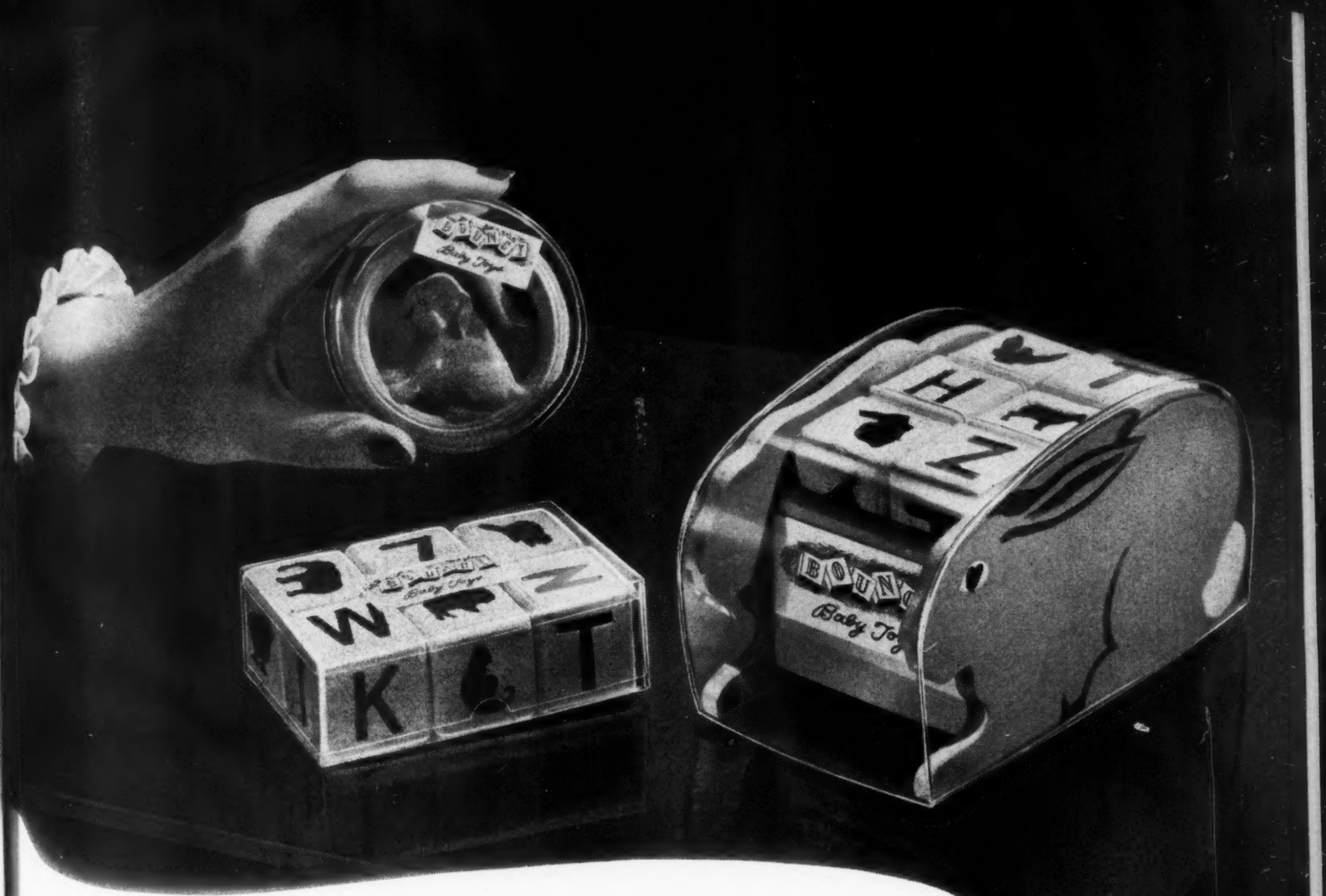
ANSWER: There is a great deal of work going on to find improved containers and transparent wrappers for fresh vegetables and fruits. It appears that any container for this use should have either inherent wet-strength properties or sufficient waxy or similar coatings to maintain the general durability of the structure in contact with the free moisture or high humidity generally associated with fresh produce.

Recent developments in treatment of papers and boards for overseas shipments for war materials would indicate that such treated papers can be expected to do some of the jobs in the produce field previously performed by wood, wood veneer and similar containers.

However, it is not possible for the packaging to exercise any positive influence in preserving the fruit except in that it can reduce the rate of deterioration by controlling the water vapor changes or the flow of other gases. Different types of vegetables and fruits have different metabolic rates and require different temperatures of storage and have varying lengths of time during which they can be considered saleable.

Transparent films which appear to be very promising for these uses are certain special cellophanes, cellulose acetate in various gauges and very thin Pliofilms. There are no doubt other transparent materials which will become acceptable after the proper thickness and composition have been worked out by careful testing.

There are other flexible materials, such as paper tissues, which have been treated by waxing or other processes and which are in use in many industries. It is recommended that you contact suppliers of these different materials, obtain samples, test them and buy the particular product most suitable.



Package with a view

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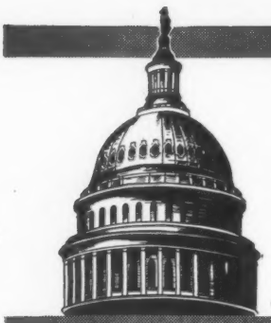


WASHINGTON REVIEW

● **Tin Use**—Although the tin import picture has not improved to any appreciable extent on the surface, possibilities for better conditions before our current stockpile of tin is exhausted are such that CPA has relaxed some of the modified controls imposed during the steel strike, when both iron and tin were responsible for drastic curbs.

Effects of the relaxed order should be felt by tin container users by now. Under the order, steel producers now may set aside 15% of their monthly tin-mill production for uses other than the production of containers for seasonable and perishable food products, drugs, medicinals and biologicals.

At the same time, CPA established a preference schedule for tin can makers under which the products listed in the paragraph above receive first priority on available tinplate.

The order M-81 now requires that can makers schedule their orders for tinplate so as to meet first the demands of products designated with an "A" symbol (the perishable and seasonal food group and other products mentioned above), prior to ordering tinplate for products in the "B" and "C" groups, as listed in the order.

In order that the tinplate produced over and above what might be required for "A" products, might be available to both the "B" and "C" groups, the amended order also limits the quantity of cans that might be purchased for products classed as "Group B" preference, to 10% of the yearly quota per month.

In addition, the order also re-establishes new packing quotas on all products, except those listed in the "A" group.

● **Tin Situation**—Relaxation of the tin-use order, however, doesn't anticipate any improvement in the situation this year, when only about 42,000 tons of tin will be imported, approximately the same as in 1945. The primary reasons for this, according to CPA, are the lack of equipment and transportation, deterioration of Far Eastern mines during Jap occupation, and lack of food for workers. Thus, in order to provide the tin estimated to be used by can manufacturers and other tin users this year (about 90,000 tons of virgin tin and secondary tin), Government stocks will have to be drawn upon to the extent of about 23,000 tons, which will cut the Government stocks at the end of this year to about 15,000 tons.

The 42,000 tons to be imported will come from Bolivia, Belgian Congo, plus available stocks and production in Malaya, Netherlands East Indies and Siam.

● **No Increase in Price of Burlap for Bags**—With resumption of private import of burlap from India, OPA is permitting the customary premium for sales of the material in quantities of less than 25 bales, *except* on sales to bag manufacturers, who usually buy in carload lots and, to quote OPA, "to permit them to buy smaller quantities at a premium price would only boost the price of bags sold for agricultural purposes."

At the same time, OPA has set maximum prices for most constructions of burlap now coming from India in increasing volume. Prices are based on India domestic ceiling prices with export costs added.

● **Lumber Exports**—A Senate Agriculture subcommittee which has been inquiring into the proposed export of some billion feet of lumber from this country during 1946, in the face of the domestic shortage of lumber and other forest products, is expected to bring in its recommendations late this month to put a stop to the export of all lumber except where such export to aid in rehabilitation of war-damaged nations would be valuable in assisting them to restore their normal economy and thus preclude the necessity for other and larger U. S. imports. Hearings were called when Senator Knowland (R. Calif.) and Senator Butler (R. Nebr.) asserted that CPA had authorized export of 250 million board feet in the first quarter of this year, and probably would authorize similar amounts for subsequent quarters.

Federal Housing Administrator Wyatt told the Committee he objected to all but essential exports, and furniture, paper and wooden container industries made representations to the committee.

● **Pulp Price Increase; Products Remain Level**—Although OPA has granted an increase in price on southern pulpwood, at the request of pulp and paper mills, there will be no change in ceilings for the mills' products—containerboard, boxboard, newsprint, magazine paper and other items, OPA says—at least for the time being. The producers' increases amounted to $1.40 per cord for the bulk of the pulpwood in all southern states, as well as a similar increase for excelsior wood, chemical cordwood, insulation and felt cordwood, and related items.

It is hoped that the increased prices will result in an increase in production. Officials here said that, while the situation is still far from good, there are indications that it will improve during this year.

● **Kiln-Drying Wood**—OPA has extended the regulation governing the services of custom-milling and kiln-drying of northeastern softwood lumber to include hardwood and all softwood except western.

Prices for kiln-drying green hardwood were increased under the regulation, but owners of lumber, who will be required to absorb the higher prices, will in return be relieved of cost of air-drying services prior to kiln-drying and will receive much earlier delivery than formerly to compensate them for the higher prices.

● **Drum Production**—Production of heavy steel shipping barrels and drums in 1945 amounted to 22,240,723 units, an increase of almost 2.5 million over the 1944 figure (19,933,798), but almost five million under the 1943 production of 27,194,241, Commerce Dept. reports.

The 1945 production of light types of steel barrels and drums totaled 6,567,123 units, as against 5,152,714 in 1944 and 3,976,733 in 1943. Of the 1945 production, more than half (3,850,619) were of lock side-seam construction, and 2,716,504 were welded. However, the figures show that the trend over the past three years has been to welded side-seam construction; in 1943 only 860,000 light drums utilized welded side seams; in 1944 this number more than doubled (1,952,476), and the 1945 production of this type shows an increase of more than three quarters of a million over the previous year.

● **Priorities Aid**—Producers of pulp and other wood packing and packaging materials will benefit from the priorities aid extended primarily to producers of softwood veneer, softwood plywood, house millwork building board and building paper, in connection with the administration's housing program. CPA has ruled that such producers along with pulp producers may have CC ratings to purchase new equipment and for expansion.

"Maw, *don't ye sometimes hanker for suthin' to happen?*"

The above is as good a cue as any to give you an important angle on Crown cans. Do you ever stop to think what happens to the wide array of products that are packaged in Crown cans? . . . Nothing . . . Nothing happens because products entrusted to Crown cans are safe. Crown cans—airtight, lightproof, sturdy—protect flavor, color and quality, from the time the products are packed until the time they are used. This angle is mighty important to your customers, too.

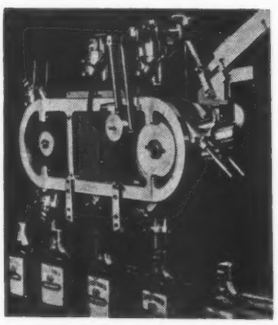
CROWN FINE METAL CONTAINERS

CROWN CAN COMPANY • PHILADELPHIA • Division Crown Cork & Seal Company, Inc. • Baltimore, Maryland

Equipment and Materials

CELLULOSE BANDING MACHINE

Immediately after its introduction at the Packaging Exposition in Atlantic City, April 2–5, a commercial model of the cellulose banding machine, developed by Wright's Automatic Machinery Co., Durham, N. C., was installed at Seagram's, Lawrenceburg, Ind. Specifically designed for the purpose of automatically applying contractible bands, such as wet regenerated cellulose bands, to the neck portions of bottles, the machine should prove valuable in speeding up operations in the bottling of liquor, wine and drugs, and in the packaging of foods and cosmetics.



The cellulose bands are stacked in the magazine ready for delivery to the band-applying mechanism. Bands are then removed from the magazine one at a time by a vacuum head, and the band-applying mechanism after opening the band carries it into position for delivery on the bottle. The band is applied to the bottle as it passes through the machine on a continuous conveyor belt. Speed range is from 30 to 120 per min. depending on the requirements of the bottling line. Adjustments are provided so that half-pint, pint, fifth and quart bottles with round necks may be run in the same machine, entirely operated by a single $^3/_4$ hp. motor. Controls are provided so that no band will be delivered to the band-applying mechanism unless a bottle is entering the machine.

NEW DISPLAY FABRICS

A new line of attractive and durable display fabrics, in metallic, pearl, or high luster finishes and grain effects, is available from The Pantasote Co., Passaic, N. J. Useful as decorative backgrounds for retail store windows, these waterproof coated fabrics may be obtained on paper or sheeting. Easily cleaned with soap and water, they may be re-used several times, the company claims.

NEW PLIOFILM FOR FROZEN FOODS

The Goodyear Tire & Rubber Co., Akron, Ohio, announces the development and production of a new type of rubber hydrochloride film, known as FF Pliofilm, particularly adapted for frozen foods. This new material, according to the company's Chemical Products Division, remains flexible at −20 deg. F., possesses the same heat-sealing qualities of conventional Pliofilm and, in addition, can be sealed against the frozen product. Tests made by the company show that moisture transmission at this low temperature is practically eliminated. Also that refrigeration burn to food, due to dehydration, does not occur in this material.

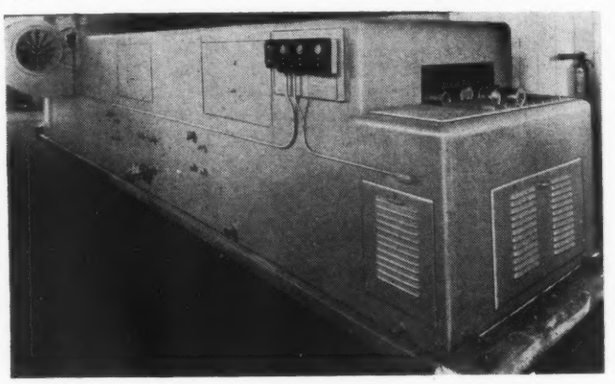
Plans are underway for supplying this material, in rolls of convenient widths for packaging meats and poultry, to commercial packers, locker plants, and users of quick-freeze units; and as carton liners for the many types of loose foods such as peas, beans, small fruits, etc.

SHOCK RESISTANT PLASTIC AVAILABLE IN COLOR

Melmac 3020 molding material is the first thermosetting, shock-resistant plastic available in a range of standard colors, according to American Cyanamid Co., New York, suppliers of this material. The compound, formerly supplied in black and mottled white, found wide acceptance in industrial applications because of its strength, electrical and chemical resistance properties. Now that it is available in color, those properties plus its lack of odor and taste, and other food resistant properties, seem to indicate that it may be adopted for food containers and trays.

CAN WASHING MACHINE

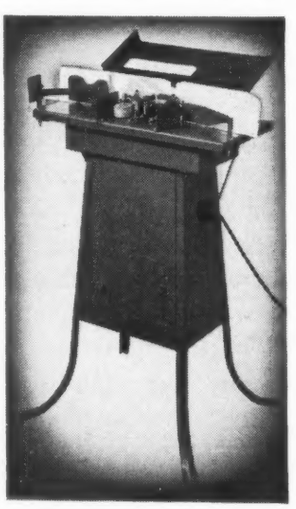
The Howard Engineering & Mfg. Co., Cincinnati, Ohio, announces a new machine which washes, rinses and dries food cans before and after cooking. Especially designed for removing oil, grease and food particles from cans of meat, fish or other foods, the machine is made in a variety of sizes to fill the needs of all types of food processing plants. In operation, the cans come to

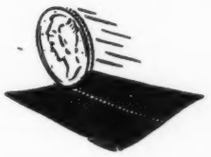


the machine on a conveyor belt which feeds automatically to the belt of the washer. The cans travel through the machine and are washed, rinsed and dried before being discharged upright on the packing conveyor. Provision is made for easy inspection and cleaning of the machine so essential to the cleanliness required in food industries.

AUTOMATIC MARKING MACHINE

Adolph Gottscho, Inc., New York, announces a new code-dating and control-numbering machine, known as the Markomatic Code Dater. This machine marks flat paste-end or tuck-in cartons, envelopes, bags and labels. Components to be marked are placed in small stacks in the infeed magazine, marked and piled in an outfeed trough. The mark is either a sharp clear inked one made from metal type, or may be a blind uninked one debossed into the cartons, labels, etc. Adjustments for varying the mark location are easily made. Impressions are made with metal type which is interchangeable, allowing simple control or code numbers to be changed in a matter of seconds. Inking is done by a fountain ink roller. The separating section, properly adjusted, makes skipping impossible whether operating on thin paper, thick chipboard cartons or medium thickness bags. Care-



Take a new dime with nice sharp ridges on its edge, roll it  across a piece of paper, and you will have an embossed line. That's basically the embossing principle. If the paper you embossed was laying on a glass topped desk, you didn't get much embossing effect. If you first put your paper on top of a blotter, you did a good job, if you put enough pressure on your embossing "tool."

Put the dime down flat between two blotters, hit it with a hammer, and you are going through the principle of flat embossing such as is done on printing presses. Roller embossing, such as we do, is faster, less expensive and more uniform.

A steel roll is engraved with the design. Mounted in an embossing machine the steel roller rests on a very hard paper roller. The two rolls revolve and, as they do, pressure up to one thousand pounds per square inch is gradually placed on the steel roll shafts. The surface of the paper roller is moistened and gradually the engraving on the steel raises a compensating pattern on the paper roller. This is the male and female die effect you have heard about. When the paper roller has built up in the steel roller indentations so that it fits snugly into every line of the steel roll design, you are ready to emboss your paper. This is known as relief embossing, and you can always identify it, because the back, as well as the front of the paper, shows the embossing design.

"Surface" embossing is the kind that generally puts the design only on one side of the paper. Instead of running the paper roller into the steel roller the paper roller (much harder to start with) acts just like the glass top on your desk. So to get an impression the design on the steel roller stands out like type would and it squeezes the paper being embossed between the high spots on the steel and the hard surface of the paper roller, pressing the design into the paper. This is also known as "hot" embossing because heat is sometimes used to improve results.

Embossing is one of the difficult jobs in packaging paper production. We think we get as fine a result as you will see anywhere, especially in those jobs where private designs and trademarks are embossed into papers.

Please write out your questions and address them to the teacher at Matthias Paper Corp., 165 W. Berks St., Philadelphia 22, Pa., or to them at Box 127 Wellesley, Mass., or to Guilford Bldg., Greensboro, N. C.

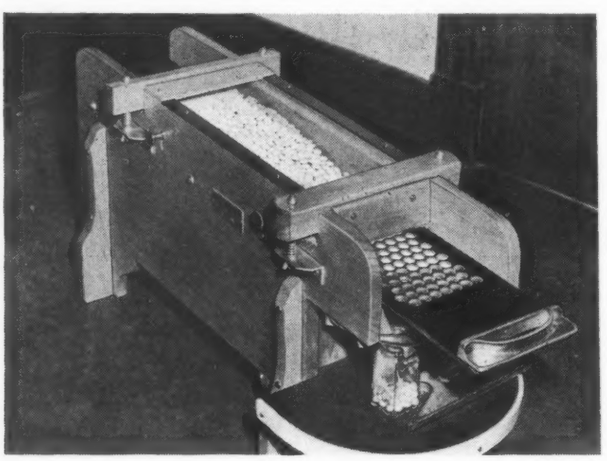
Equipment and Materials

(*Continued from page 174*)

ful location of impressions is assured by the unique method whereby the rotary die is started in motion and is prevented from making second impressions, regardless of the length of the object. There is practically no restriction of the maximum length or maximum or minimum width, the company states. Four standard models are made for control numbering or dating. Construction of the machine makes it a compact and simple unit which is easy to handle and operate.

TABLET COUNTING AND FILLING MACHINE

Both uncoated and coated tablets, capsules and perles may be packaged quickly and easily in various types and sized containers with the new tablet counting and filling machine made by Enu-Matic Equipment Corp., Los Angeles, Calif. To operate the selector eye, which is a circular-shaped disc containing a series of nine holes, it is set at the opening corresponding to the mouth opening of the container to be filled, and is instantly locked into



position and ready for operation. The platform on which the container is placed is adjustable to comply with various heights of containers. Attached to this platform is a V-shaped aluminum container guide and stop which is easily adjusted in accordance with the circular selector eye. The guide and stop serves the purpose of stopping the containers, which are fed through the raceways, at the exact point of contact with the selector eye. Here the transparent plastic funnel permits the operator to observe the entire filling process.

Plastic slides are moisture- and warp-proof and, incidentally easily cleaned by withdrawing from the machine and wiped or brushed. When the same product is packaged into various sized containers requiring different counts, one slide may, in many instances, be arranged so that it is adaptable to the count variation. This arrangement saves the cost of additional counting plates. For noiseless control, the slides are equipped with a rubber-faced aluminum handle. Two full-floating, spring-action brushes prevent chipping, crushing, scratching or breaking of the product. Built-in feature removes and separates waste matter such as powder and small broken pieces, from uncoated or compressed tables, thereby preventing transfer to the container. Machine requires no electricity, cumbersome adjustments or extra tools.

ROTARY FILLING MACHINE FOR LIQUIDS

A high-speed rotary filling machine designed for rapid, uniform filling of liquids ranging from the free-flowing types to heavy viscous syrups has been developed by Amon-Schulte Co., Emsworth, Pa. Containers may be bottles, cans, jugs or heavy paper containers, from the tapered shape to wide-mouth type up to $3\frac{1}{2}$ in. in diameter. Special features of the machine are: tank with automatic flow control, which maintains an established level of liquid during operation; filling tubes with automatic cut-off at the top in the tank, as well as at the bottom of the tube; and cover may be easily removed for cleaning. Tubes may be made of monel metal, stainless steel or brass triple silver-plated.

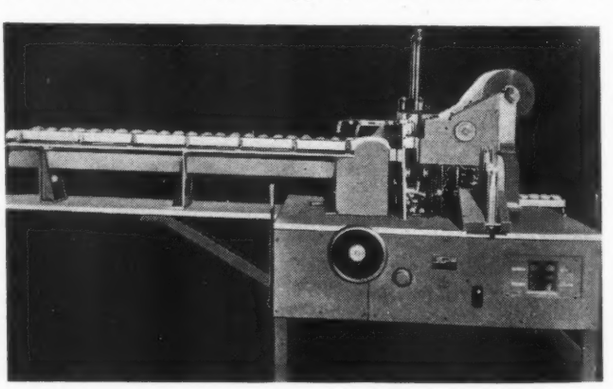
PHOTO-ELECTRIC REGISTRATION CONTROL

A new high-speed registration control for use on either intermittent or continuous flow high-speed wrapping machines has been announced by the Fisher-Pierce Co., Boston, Mass. In the former type of machine, the paper is fed until the registration mark enters the field of view of the photo-electric scanner. At this point the feed clutch is disengaged, stopping the flow of paper; a knife cuts it off; and the rest of the wrapping sequence is initiated. In the latter type of wrapping machine, the paper flows continuously, slightly slower than is actually required, and is monitored by a scanner which contains a light source and photo-tube. As the registration marks on the paper lag, the photo-control operates an adjustable timing control which, in turn, operates a motor for a short period. The motor accelerates the paper through a differential mechanism.

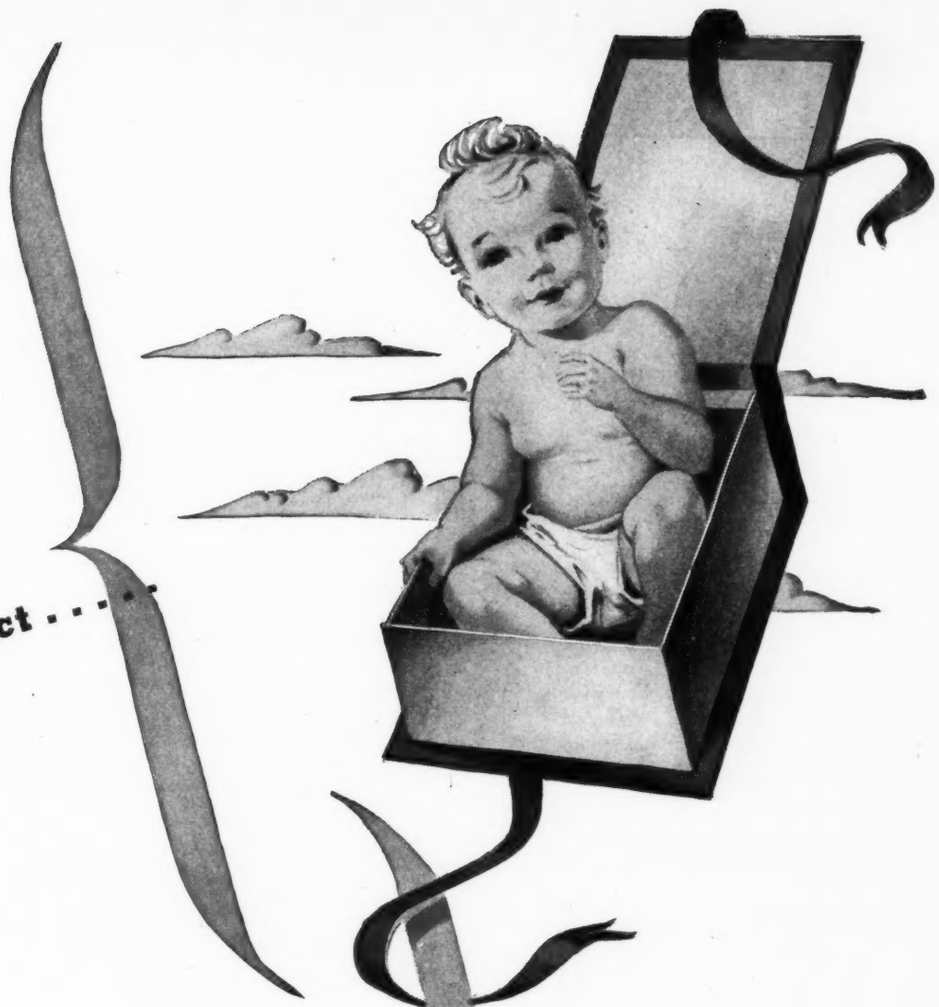
The entire chassis of the registration control is so designed that it may be plugged into the wrapping machine as simply as a tube in a socket. Scanners are designed for either reflected light or transmitted light. On the new reflected light scanner, both the light source and the photo-tubes are combined in a single compact unit. Components are properly aligned and assembled at the factory so that no focusing adjustment is necessary in the field.

CELLOPHANE WRAPPING MACHINE FOR CRACKERS

Wright's Automatic Machinery Co., Durham, N. C., are producing a machine which automatically wraps standard five-cent packs of cracker-type sandwiches in cellophane without the use of cardboard boats or other support; heat seals the wrap; and



applies heat sealable labels to one or both ends. Standard heat sealing moisture-proof cellophane is fed from a continuous roll with all folds controlled to give a single lap of at least $\frac{3}{4}$ in. which is then heat sealed. Regular die-cut heat-sealable labels are then applied to both ends of the pack simultaneously, after the end fold has been pre-sealed. One end only may be labeled, if desired. Each of the two label magazines has a capacity of 2,000 labels and may be refilled while the (*Continued on page 190*)



the right start in life for your product . . . .

. . . . . is a striking appearance of its package

New things in the making demand the finest in packaging art for their dramatic entrance into keen competition. Dominating beauty arrests attention and compels interest which counts a great deal in the battle for sales. This you gain when you choose a package creation by Warnercraft.

Warnercraftsmen are sure to give conscientious consideration of your specifications for a practical distinctively designed package. Our artisans will create that important individual look that will subtly but definitely identify your product, and bring in sales.

WARNERCRAFT

"THE FINEST WORD IN PACKAGING"

Makers of set-up and folding boxes of all types, transparent acetate containers, hand made specialties, counter displays and dispensers.

THE WARNER BROTHERS COMPANY

Main Office and Factory: 325 Lafayette Street, Bridgeport, Conn.
New York Sales Office: 200 Madison Avenue, New York, N. Y.

Plants and People

H. Lyle Greene was honored recently with a testimonial dinner by officers and directors of the **J. L. Ferguson Co.**, package machinery manufacturers, Joliet, Ill., in recognition of his 15 years of service with the firm and his wartime accomplishments as the company's official Washington and trade association representative. Mr. Green, first vice-president of the **Packaging Machinery Mfgrs. Institute,** was given an award of merit by WPB for his wartime service as a member of the Industry Advisory Committee on Packaging & Labeling Machinery and Equipment.

Col. Rohland A. Isker, commanding officer of the Quartermaster Subsistence Research & Development Laboratory at Chicago, has announced the award of the Laboratory's Certificate of Appreciation to the following individuals connected with the paper industry for meritorious service in the World War II food program of the Army: **H. T. Barker, Bird & Son; L. S. Johnson, Hummel & Downing Co.; George R. Sears, Institute of Paper Chemistry; W.H.Graebner,Marathon Corp.; Peter J. Massey, H. P. Smith Paper Co.; Frank Pocta, Paper Shipping Sack Mfgrs. Assn.; Reynolds Guyer, Waldorf Paper Products Co.; Otto Miller, Beech-Nut Packing Co.; Karl E. Prindle, Dobeckmun Co.; R. G. Macdonald, Technical Assn. of the Pulp and Paper Industry; Charles A. Southwick, Jr., of Shellmar Products Co.,** and technical editor of MODERN PACKAGING; **A. Wendler, E. I. du Pont de Nemours & Co., Inc.**

Sherman Paper Products Corp., Newton Upper Falls, Mass., announces the appointment of **Eugene W. Preston** as sales manager of the industrial division. **Warren Tobecksen,** previously with **General Electric,** replaces Mr. Preston as chief research engineer.

The new and retiring officers of Continental Can Co.: (left to right) T. C. Fogarty, new vice-president in charge of sales; Allan M. Cameron, new vice-president in charge of equipment development and research; W. H. Funderburg, retiring vice-president in charge of sales; Hans A. Eggerss, executive vice-president; J. F. Egenolf, retiring vice-president in charge of manufacture; and Paul E. Pearson, vice-president now in charge of operations.

The Board of Directors of **Continental Can Co.** has elected **T. C. Fogarty,** former general manager of the company's eastern division, as vice-president in charge of sales, according to an announcement by **Hans A. Eggerss,** executive vice-president. **Paul E. Pearson,** formerly vice-president in charge of equipment development and research, was named vice-president in charge of operations, and **Allan M. Cameron** moved up from general manager of equipment development and manufacture to the position vacated by Mr. Pearson. **W. H. Funderburg,** former vice-president in charge of sales, has retired because of ill health but will remain with the company temporarily in a staff advisory capacity. Mr. Pearson's newly created office includes responsibilities formerly held by **J. F. Egenolf,** vice-president in charge of manufacturing, who has resigned.

J. E. Niederhauser has been appointed manager of industrial relations for Continental, following the resignation of **B. M. Brock.** Mr. Niederhauser will make his headquarters in New York.

In the equipment development and research division, **Howard J. Kuntz** has been appointed chief engineer of customer runway engineering, with headquarters in Chicago. **Pete Kovick** is now manager of the Chicago runway department. **V. J. Taranik** has resigned as assistant to the manager of customer research, Pacific division.

Dr. William H. Aiken, former captain in the Quartermaster Corps in charge of research and development work on coated fabrics and plastics, has been named assistant manager of the plastics and coatings department in the newly organized chemical products division of **The Goodyear Tire & Rubber Co.,** Akron, Ohio. Appointment of a tobacco packaging specialist and a sales analyst to handle Pliofilm has been announced by Goodyear. **J. H. Conrad** has been assigned as the tobacco packaging specialist, and **Robert Anderson** as sales analyst.

Dr. Aiken

Robert G. Neubauer, formerly with the package design department of **McKesson & Robbins,** has established offices at **Southport, Conn.,** where his services as an independent package designer and consultant are available.

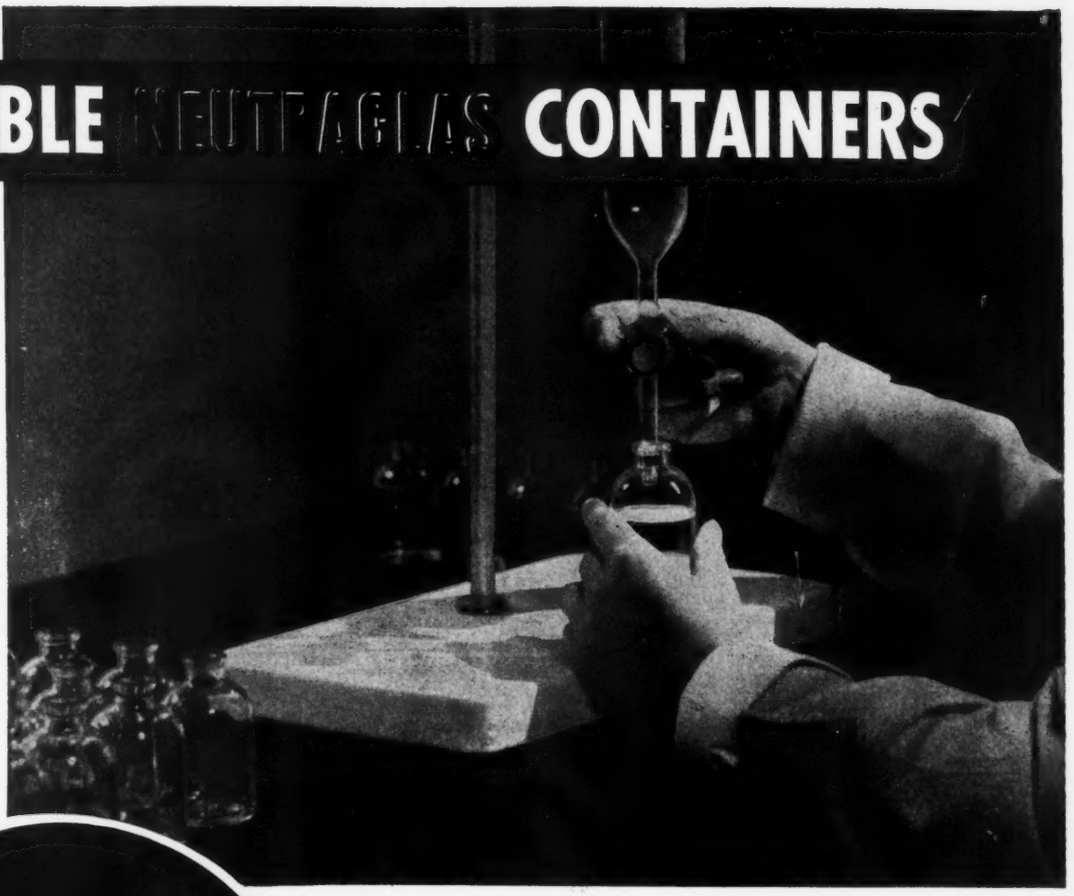
The B. F. Goodrich Chemical Co., Cleveland, Ohio, has announced the promotion of **M. Scott Moulton** to technical service manager for **Geon** thermoplastic materials and it plans to more than double manufacturing facilities for Geon polyvinyl resins. In his new post, Mr. Moulton will disseminate technical information from the company's laboratory to the sales department for customer use and will handle technical service requirements.

Walter Byrd has been appointed packaging engineer of **Standard Brands, Inc.** to act as consultant on packaging and to study, inspect and analyze new developments in materials, machinery and methods in line with the company's peacetime expansion program. Previous to this appointment, Mr. Byrd served as chief packaging engineer for **Johnson & Johnson.**

Donald Donaldson has been appointed sales manager of the **Edward Ermold Co.,** it was announced recently by **Karl Kemm** chairman of the board. The company, manufacturers of automatic multiple and semi-automatic labeling machines since 1880, has its office sand plant at 652Hudson St.,New York. Mr. Donaldson brings extensive sales and advertising experience to his new duties.

D. Donaldson

KIMBLE NEUTRAGLAS CONTAINERS



Standardize NOW on Kimble Ampuls, Serum Vials, Serum Bottles and Clinical Glass Containers made of NEUTRAGLAS (N-51A Glass) — CLINICALLY SAFE.

The manufacturer who takes scrupulous pains in preparing a parenteral solution is equally concerned to protect it until the moment of use. He requires a container which will not impair the quality he has created in his product.

Kimble NEUTRAGLAS—being highly resistant to solvent action and chemical attack—protects to the utmost the quality, potency and pH value of any product packaged in it.

• • • *The Visible Guarantee of Invisible Quality* • • •

KIMBLE GLASS COMPANY . . . VINELAND, N. J.

NEW YORK • CHICAGO • PHILADELPHIA • DETROIT • BOSTON • [illegible] • SAN FRANCISCO

Plants and People

(*Continued from page 178*)

R. A. Hickman, formerly with the **Forest Products Laboratory** as supervisor of packing and packaging of ordnance matériel, has joined the staff of **The Dobeckmun Co.,** Cleveland, Ohio. Prior to his service with the Forest Products Laboratory, Mr. Hickman was with the cellophane division of **E. I. du Pont de Nemours & Co.**

R. A. Hickman

The United Paperboard Co., Inc., New York, has announced the appointment of **O. E. S. Hedbring** as assistant to the vice-president in charge of production. Mr. Hedbring, formerly associated with the **Ohio Boxboard Co.,** will make his headquarters at the company's mill in Thomson, N. Y.

Stein, Hall & Co., Inc., adhesives manufacturers, New York, announce the election of **Oliver H. Clapp** and **Robert M. Stein** as directors. Mr. Clapp is vice-president in charge of the sales division. Mr. Stein, also a vice-president, is associated with the foreign division. Announcement has been made of the resignation, effective June 30, of **Dr. Alexander Frieden,** vice-president and director of the company's technical division.

Recent appointments at Stein, Hall include **Lt. Col. J. Rex Adams,** acting manager of the technical division; **Robert Strasser,** assistant sales manager; **Harold M. Johnston** and **Ralph W. Bettleheim,** manager and assistant manager respectively, of the starch products department; **John C. Daly, Jr.,** assistant manager of the burlap department.

Maj. Jack Manion has assumed management of the meat packers' division of **Milprint, Inc.,** Milwaukee, Wis. Before joining the Army, Maj. Manion had managed the domestic sausage division of **Wilson & Co.'s** midwest plants. He spent some time during his military service in England with the **Smithfield Institute** which is the center of meat packing for the British Empire, and at the **Low-Temperature Research Station** at Cambridge University.

J. Manion

Norman A. Schoelles has been named director of the package design dept. of **J. Gordon Lippincott & Co.,** New York industrial designers. Mr. Schoelles, formerly with **Raymond Loewy Associates,** succeeds **Henry Russell,** who will remain with the organization as a consultant.

Stan David Studios, 144 E. 34th St., New York, announce a new service for printing and publishing full-color, custom-designed lithographed box wraps in conjunction with their regular design service.

Don Fobes, recently released from service with the **Navy Purchasing Office,** has returned to his former post with the **Paper Package Co.,** Indianapolis, Ind.

Peter Mfg. Co., manufacturers of partitions for paper boxes, has been organized as a corporation and will henceforth be known as the **Peter Partition Corp. L. P. Raubenheimer** will serve as president of the organization, and the plant will continue operations at its present location, 647–649 Lexington Ave., Brooklyn 21, N. Y.

Robert F. Wilson, formerly with the **Block Drug Co.,** has joined the **Topics Publishing Co.,** New York, as an editor.

Robert E. Bauer has joined **Deerfield Packing Corp.,** Seabrook Farms, Bridgeton, N. Y., as packaging engineer. Mr. Bauer, who served as packing control officer for the Army in the India-Burma theater, originated and developed many of the substitute packages used during the war years. Before entering the service, he was a paper mill broker and package designer and devoted considerable time to developing new methods of packaging.

R. E. Bauer

Paul E. Burbank has been named manager of cargo sales for the **United Air Lines.** Mr. Burbank, who has been with the organization for several years, was formerly with the **Eaton Paper Corp.,** where he helped develop specialized papers for airmail use.

Lt. Reynold H. Goodman, AUS, has rejoined **Crystal Transparent Corp.,** New York, distributors of **Sylvania** cellophane, as production manager.

John T. Vlasick and **Lyle T. Westlund** have formed the **Johnwest Co.,** with offices in the National Bldg., Seattle, Wash. The new firm will specialize in protective food packaging and act as sales representative for paper manufacturers and converters. Both members of the new company were formerly with **Blake, Moffit & Towne,** paper manufacturers, and are experienced in the food packaging field.

William H. Hugus has been appointed manager of sales for the **Caspers Tin Plate Co.,** Chicago. Mr. Hugus was formerly with the tin plate division of **Carnegie-Illinois Steel Corp.** in Pittsburgh.

The Chase Bag Co., Chicago, has sold its factory building at 700 Washington Ave. N., Minneapolis, and will erect a new modern bag plant on Washington Ave. N at 38th St. The new building will contain approximately 160,000 sq. ft. of floor space.

Dewey & Almy Chemical Co., Cambridge, Mass., announces the appointment of **Dunbar L. Shanklin** to the newly created post of assistant director of the research laboratories, in charge of container sealing research. Mr. Shanklin will direct all research, testing and evaluation of sealing compounds and all work on the design and development of equipment for applying and drying compounds commercially. **George W. Blackwood** succeeds Mr. Shanklin as manager of the company's container division.

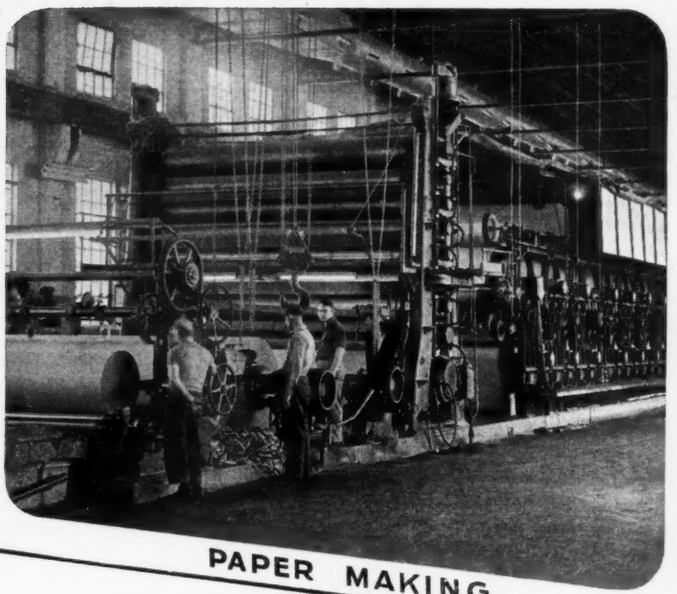
Henry F. Kroger has resumed his duties as sales representative with **Richard M. Krause, Inc.,** New York printers and designers, following his service with the Army.

Celloprint, Inc., a newly organized firm specializing in all types of printed acetates, foils and cellophane, with facilities for oil, aniline and gravure printing, announces the opening of its plant at 200 Varick St., New York 14, N. Y. The plant will be under the direction of **D. H. Roemer,** vice-president in charge of manufacturing.

Plastic Film Corp., Plainfield, Conn., announces the appointment of **Laurence R. Sherman** as general sales manager. Prior to joining the company a year ago, Mr. Sherman did research, technical service and sales work with textiles and industrial chemicals.

Francis Chilson, industrial consultant in the process and packaging industries, has announced the expansion of his services. The firm is now known as **Francis Chilson Industrial Consultants.** Its present research (*Continued on page 202*)

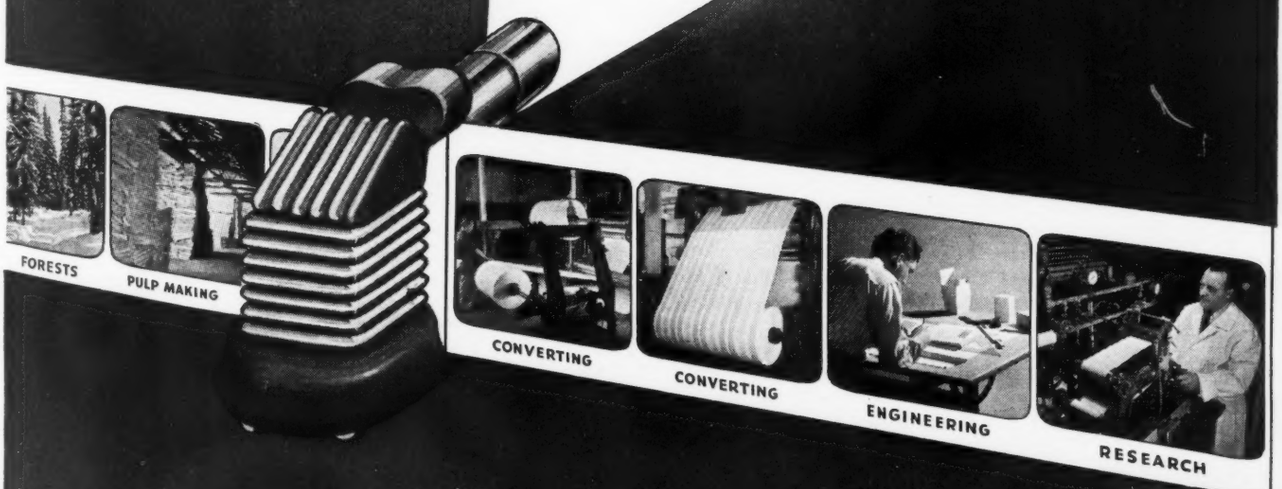
THE quality of a package is the final reflection of many stages of production. It starts with the forest tree itself . . . . then the quality of the pulp . . . . the paperboard . . . . the protective coatings . . . . the construction . . . . the design . . . . the printing . . . . the engineering skill that determines the requirements for proper protection. At Marathon all these elements of manufacture are integrated in one single process of production . . . . with complete unification of quality control. Which is why Marathon is so well able "to build the package for the job."



PAPER MAKING

MARATHON INTEGRATION MEANS

Complete Quality Control



FORESTS

PULP MAKING

CONVERTING

CONVERTING

ENGINEERING

RESEARCH

MARATHON CORPORATION
MENASHA, WISCONSIN

MARATHON

For Your Information

The directors of the **Western Growers Assn.** have approved the research committee's program for the establishment in the Los Angeles district of an experimental laboratory to be known as the **Western Growers Experimental Institute.** Through practical experimentation, the Institute will attempt to improve present methods of packing and handling fresh vegetables and melons, discover by-product usage for waste and culls and develop methods of volume consumer-unit prepackaging at shipping points.

A brochure just published by **The Wooden Box Institute,** **"Nailed Wooden Boxes Deliver the Goods,"** describes and illustrates in full color the different types of nailed wooden boxes used for packing various fresh fruits and vegetables. Copies may be obtained from the Institute, 55 New Montgomery, San Francisco, 5, Calif.

First annual meeting and presentation of the **Frozen Food Foundation, Inc.,** Syracuse, N. Y., was held **March 28–30** in the **Frozen Food Bldg.,** 600 W. Genesee St., Syracuse. The presentation, prepared in collaboration with **Frozen Food Products, Inc.,** a companion organization, was built on the theme of **"Blueprints for Better Living."** The new **"Frostmaster"** home storage frozen food cabinet was on display, and guests were invited to inspect the Syracuse frozen food home-delivery pilot plant operation as well as the Foundation's research and service laboratories.

The Waxed Paper Institute, Inc., will move to new and enlarged quarters in the **First National Bank Bldg.,** 38 S. Dearborn St., Chicago. At its recent annual meeting in New York, attended by converters whose production represents approximately 85% of the total tonnage of waxed paper produced in this country, plans to broaden existing markets and to develop new sales outlets were adopted. Four members were elected to the Institute's executive committee: **Harlan K. Snyder, Central Waxed Paper Co.,** Chicago; **J. E. Edelstein, Rapinwax Paper Co.,** Minneapolis; **B. F. Lacy, Southern Waxed Paper Co.,** Atlanta, Ga., and **George C. Wieman, Western Waxed Paper Co.,** Los Angeles.

The New York Chapter of **The American Designers' Institute** elected the following officers at its recent annual meeting: **John Vassos,** chairman; **Scott Wilson,** vice-chairman; **Ann Franke,** secretary and **Fritz Foord,** treasurer. Copies of the 1945 Roster may be obtained from the Institute, 115 E. 40th St., New York 17, N. Y.

Phoenix Flame, published by **Phoenix Metal Cap Co.,** Chicago, has been awarded highest honors in the magazine division at the 19th Annual Exhibition of Design in Chicago Printing.

More than 200 companies will participate in the **National Plastics Exposition** at **Grand Central Palace April 22–27.** Sponsored by the **Society of the Plastics Industry,** the Exposition will bring together for the first time the industry's leading manufacturers of raw materials and machinery and companies that mold and fabricate new and standard plastic products and parts. Many new plastic packaging materials and plastic adaptations will be available for inspection, and experts will be present to consult with manufacturers on technological phases of plastics. Concurrently with the first three days of the Exposition, the SPI will hold a convention. Attendance will be restricted during that three-day period to members of the trade, but the general public may view the exhibits beginning Thursday, April 25.

A bound portfolio of booklets and folders on the varied aspects and applications of industrial design has been prepared by **J. Gordon Lippincott & Co.,** industrial designers, New York and Chicago. Included in the portfolio are pamphlets on packaging, product development, style obsolescence, product merchandising, and a folio on the costs of industrial design. Requests for copies should be addressed to the company's New York office, 500 Fifth Ave.

Total retail sales volume of cosmetics, perfumes and other toilet goods preparations, exclusive of toilet soaps, has risen from $39,800,000 in 1914 to an estimated $659,930,400 in 1945, according to an announcement by **The Toilet Goods Assn., Inc.** The estimate shows a substantial increase over the previous year and sets a record.

Among patents recently dedicated to the public for free use, the Dept. of Commerce has announced, are nine owned by **Walter Kidde & Co., Inc.,** Belleville, N. J., and three owned by **Hercules Powder Co.,** Wilmington, Del. Included in the Kidde patents is one designed to improve means of storing explosive liquids. The Hercules patents relate to improvements in varnishes and lacquers and a substitute for tung oil. These patents are among some 10,000 now listed on the **Register of Patents Available for Licensing,** established in the U. S. Patent Office last year to encourage wider use of patented inventions which owners are willing to sell or license for use by others.

The complete line of dating and numbering machines made by **Wm. A. Force & Co.,** 216 Nichols Ave., Brooklyn 8, N. Y., is shown in the company's new catalog. Copies may be obtained on request to the firm.

Technical and scientific workers and librarians will find the new catalog of technical books just issued by **The Chemical Publishing Co.** useful. Listing the latest books on chemistry, technology, foods, etc., the catalog also gives publication dates, price, table of contents and detailed descriptions. Copies are available on request to the publisher, 26 Court St., Brooklyn 2, N. Y.

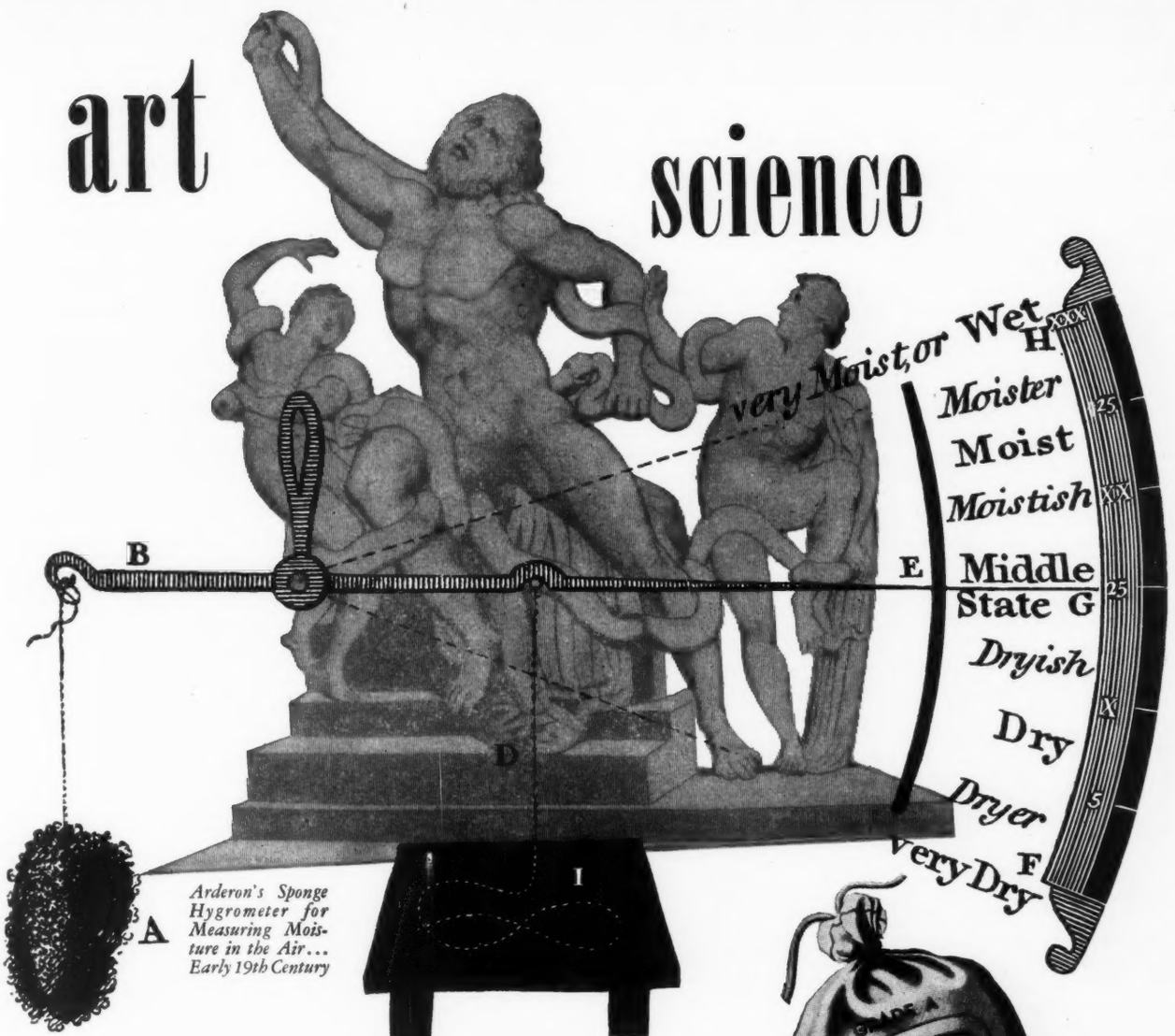
The Corrugated Box Distributors Assn., Inc., composed of one-piece corrugated box distributors in New York City, elected the following officers at its recent meeting: **Milton Sherry, Hudson Corrugated Carton Co.,** president; **Jack Korf, Albert Corrugated Co.,** vice-president; **Milton Feldman, Feldman Bros.,** secretary, and **Leon Klein, Jr., A. G. Container Products Corp.,** treasurer.

Tenth annual **"Perfect Shipping Month"** is being observed this month. Each April the thirteen regional **Shippers Advisory Boards** thoughout the country undertake to bring together all the forces in the field of shipping, focus attention on the varied factors affecting the movement of goods, and ascertain what progress can be made toward perfecting distribution. Shown is a reproduction of the campaign poster. A 6-page leaflet is also being used to promote the campaign.

A visual interpretation of the **Inter Society Color Council—National Bureau of Standards** method of color designation is presented in a 16-page booklet recently issued by **General Printing Ink Co.,** division of **Sun Chemical Corp.** The text is amply illustrated and so written that the reader can grasp the relationship between words and color forms. Requests for copies of the booklet should be addressed to the company's advertising department, 100 Sixth Ave., New York 13.

Detailed information on the line (*Continued on page 188*)

art science economy



Arderon's Sponge Hygrometer for Measuring Moisture in the Air... Early 19th Century

DAVISON DEHYDRATED PACKAGING, using Protek-Sorb* silica gel as the desiccant, gives you the results of years of research and experience in the elimination of all moisture damage—mildew, mold, rust and corrosion—to goods in transit and storage. DAVISON DEHYDRATED PACKAGING is economical—it can be adapted to periods of storage varying from months to years, and to all climates and conditions.

DAVISON DEHYDRATED PACKAGING gives protection without sacrifice of art in packaging—sales appeal is enhanced because goods reach the consumer factory fresh in perfect condition and adjustment . . . free from messy "preventives" . . . free from mildew, mold, rust or corrosion.

A choice of "barriers", or moisture vapor-proof envelopes, used in DAVISON DEHYDRATED PACKAGING permits a wide range of package design and shelf attention for the product where necessary.

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U. S. patent digest

edited by H. A. Levey

This digest includes each month the more important patents which are of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at ten cents each in currency, money order or certified check; postage stamps are not accepted.

Slitting and Scoring Apparatus, H. W. Bruker (to George W. Swift, Jr., Inc., Bordentown, N. J.). U. S. 2,393,586, Jan. 29. Paperboard slitting apparatus including upper and lower supporting frames disposed, respectively, above and below the path of travel of a paperboard web passing through said apparatus, each of said frames carrying a plurality of sets of slitting disks.

One-Piece Self-Locking Carton, A. C. Beardsell (to Western Electric Co., Inc., New York, N. Y.). U. S. 2,393,734, Jan. 29. A blank for fashioning a quick fold fragile article container comprising a flat carton blank transversely scored in a direction coincident with the long axis of the carton blank to form a bottom wall, two end walls, two side walls, a cover and a cover lock.

Valved Bag, C. V. Brady (to Bemis Bro. Bag Co., St. Louis, Mo.). U. S. 2,393,739, Jan. 29. A bag valve made up of an end area near a corner of the bag at its mouth edge, comprising when flat, two diagonal score lines defining a triangular area to be turned in to form the valve and defining end portions of front and back flaps to be turned over for closing the bag.

Liquid Carton, O. P. Downing, Dallas, Tex. U. S. 2,393,758, Jan. 29. A liquid carton comprising a blank in four foldable sections, one having an extension along one edge overlapping the next adjacent section in folded relationship, said section further having an obliquely perforated overlying flap provided with tabbed extensions along two edges thereof, half flaps carried by the second and fourth of said sections, a full flap on the third of said sections adapted to underlie said first flap and having a tapered walled hole in one corner in register with a similar hole in the corner of the flap of said fourth section, a pivoted tab having a disc thereon shaped to be correspondingly receivable in said holes and carton.

Cutting Machine, H. A. Wagner & G. H. Wagner, Portland, Ore. U. S. 2,393,845, Jan. 29. A machine for cutting asphalt impregnated porous fibre sheets and the like into a plurality of strips of selective width, said machine comprising a pair of spaced apart housings, horizontally aligned forwardly and rearwardly extending table portions secured to and supported by said housings, the adjacent ends of said table portions being spaced apart and extending between said housing, equipped with shafts to which are attached discs, and motor driven.

Closing Machine, W. D. Jordan & H. W. Lindgreen (to American Can Co., New York, N. Y.). U. S. 2,393,988, Feb. 5. In a can closing machine, the combination of a housing enclosing a chamber and having an opening therein for receiving cans to be closed, means for vacuumizing said chamber, a closing head located within said chamber, a turret for sealing the opening in said chamber, said turret being rotatable through a plurality of working stations.

Box or Carton, R. Kuhlman (to Tung-Sol Lamp Works, Inc., Newark, N. J.). U. S. 2,393,994, Feb. 5. A collapsible carton formed of cardboard and the like having its bottom and side walls formed of a single elongated strip of material, said elongated sheet being scored laterally along three lines throughout a part of the width to form the four side walls, and carrying rectangular locking tongues formed out of the bottom liner members.

Machine for Making Fibre Containers, H. J. Paynter (to American Can Co., New York, N. Y.). U. S. 2,394,007, Feb. 5. A blank feed for a can body making machine, comprising in combination a magazine for a stack of blanks, means for applying suction to one end of the blank next above the lowermost blank in said magazine to hold the same against displacement, and suction feeding means operable against the opposite end of the lowermost blank in the magazine for withdrawing same therefrom.

Method of Forming Lever Open Containers, J. E. Socke (to American Can Co., New York, N. Y.). U. S. 2,394,019, Feb. 5. A method of making containers which comprises cutting an opening in flat container blank along a marginal portion thereof, forming the said blank into a tubular container body with the marginal portion containing the opening disposed at one end of the body, and forming an outwardly extending re-inforcing edge curl on the body.

Container Closure, M. E. Baar, Canton, Ohio. U. S. 2,394,135, Feb. 5. A closure for a container having a neck, said closure comprising a unitary, integral, molded cap internally shaped to engage a neck of a container, said cap having a plurality of spaced recesses in its outer surface.

Holder, O. Lobl (to Hero Mfg. Co., Inc., Middleboro, Mass.). U. S. 2,394,457, Feb. 5. A package comprising a strip of flexible sheet material having a socket at one end and a flap at its other end, a stiff linear article on said sheet having one end inserted in said socket and its other end in position to be engaged by said flap, said flap being laid over upon said other end of the article and having retaining tongues laterally swingable in directions generally parallel with the plane of the strip.

Seaming Machine, L. Perry, Whitewater, Wis. U. S. 2,394,473, Feb. 5. A machine for heat sealing flexible synthetic thin sheet material, equipped with elongated unheated seam-forming bars, and equipped with a heating element with means for controlling temperature.

Automatic Weighing Device, A. Pipping, Bloomfield, N. J. U. S. 2,394,476, Feb. 5. An automatic weighing device equipped with a rotary bucked wheel mounted to turn on a horizontal axis and having a plurality of circumferentially spaced buckets opening radially outward, a chute for delivering to the bucket wheel the material to be weighed.

Tube Beading Device for Tampon Applicators and the Like, J. R. McLaughlin (to Tampax, Inc., New York, N. Y.). U. S. 2,394,557, Feb. 12. An apparatus for beading the ends of tubes embodying oppositely rotatable shafts; starwheels mounted on said shafts and adapted to receive and support a tube between their marginal portions.

Cutoff Drive Mechanism, H. C. Behrens (to Samuel M. Langston Co., Camden, N. J.). U. S. 2,394,589, Feb. 12. A machine for making stiff sheets of preselected length including a mechanism for continuously producing and advancing the sheet material.

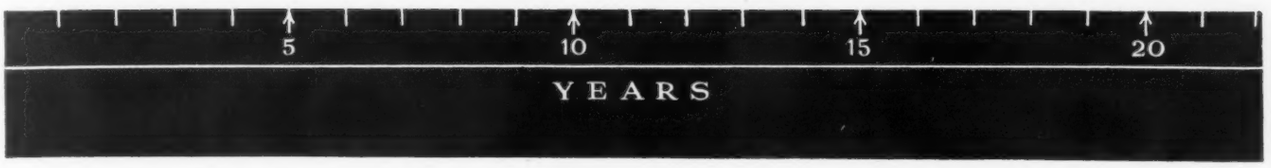
Automatic Scale, J. L. Christmann, Passaic, N. J. U. S. 2,394,593, Feb. 12. A scale, comprising a beam with a movable poise weight for counterbalancing the weight to be measured, means for limiting movement of said beam, means for reciprocating said poise weight at a constant speed one cycle on said beam for each weight to be measured.

Filling Machine, H. G. Allen (to Consolidated Packaging Machinery Corp., Buffalo, N. Y.). U. S. 2,394,737, Feb. 12. In a container filling machine, a base; a filling nozzle supported above said base; a vertically movable container supporting table carried by said base and disposed in vertical alignment with said filling nozzle, means for raising said table to place a container carried thereon in nozzle encompassing position preparatory to filling said container.

Foldable Box, G. J. Evans, Buffalo, N. Y. U. S. 2,394,850, Feb. 12. A folding box including a partition which divides the interior of the box into a plurality of cells, said partition comprising a section formed from a flat sheet blank having two longitudinal strips which are adapted to be turned relative to each other on a longitudinal line so that one of said strips forms a horizontal flange and the other a verticle flange, and said blank being slitted at intervals along said longitudinal line and said horizontal flange being slitted at intervals from its outer edge.

Bag Supporting Device, L. B. Eaton (to Pneumatic Scale Corp., Ltd., Quincy, Mass.). U. S. 2,394,901, Feb. 12. In a tea bagging machine having an endless carrier chain provided with a plurality of carrier arms, each of said carrier arms being pivotally mounted on said chain and arranged to be swung in a vertical plane, bag supporting means comprising a frame

THE YARDSTICK OF PACKAGING MACHINERY EFFICIENCY



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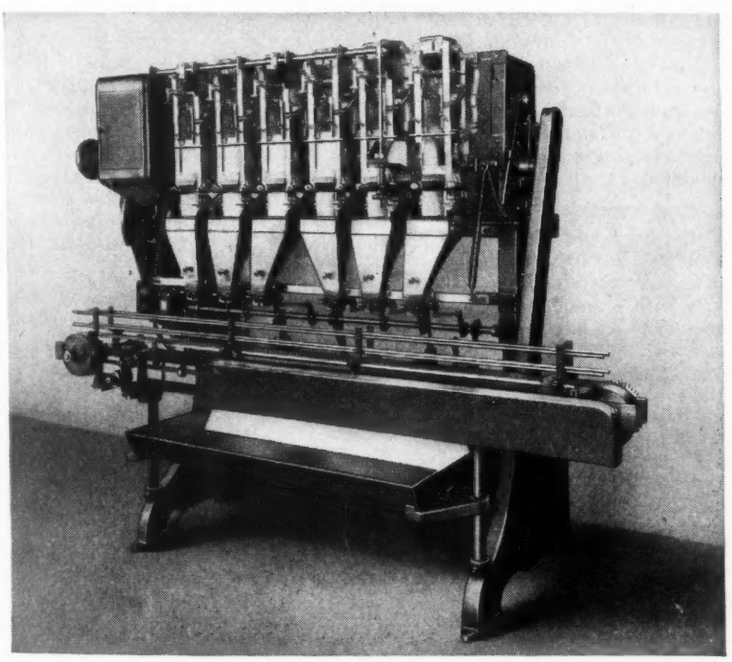

Photograph shows Six-Scale Net Weight Weigher, one of over 80 machines built at Pneumatic under a factory wide objective of "Lower Cost Per Container".

It takes longer—*much longer* than a year or two, to fully realize the true worth of packaging equipment. Analysis of the machine's life-time record of performance is necessary to find how it actually stands as to return per dollar invested.

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Pneumatic builds a complete line of packaging and bottling equipment and stands fully prepared to provide *the* most economical solution to your requirements. Pneumatic Scale Corporation, Ltd., 82 Newport Avenue, North Quincy 71, Massachusetts . . . Also branch offices in San Francisco, New York, Chicago, Los Angeles.

PNEUMATIC

PACKAGING AND BOTTLING MACHINERY

Over eighty different machines for the packaging of dry, free-flowing products and the cleaning, filling, capping and labeling of containers for liquids and semi-liquids

adapted to be rotatably mounted on said arm and having a pair of hollow clamping jaws pivotally carried on said frame.

Method and Apparatus for Forming Lined Boxes, F. D. Palmer (to Kraft Foods Co., a corporation of Delaware). U. S. 2,394,935, Feb. 12. In an apparatus, the combination of a mandrel, means for continuously propelling said mandrel, means for feeding a blank sheet into the path of travel of the mandrel, means cooperating with said mandrel to fold said blank sheet around the advance end of the mandrel thereby to fold the sheet into U-shaped form embodying receptable side walls and a bottom wall portion.

Packaging Apparatus, F. D. Palmer (to Kraft Foods Co., a corporation of Delaware). U. S. 2,394,936, Feb. 12. Packaging apparatus comprising means for receiving a package, and means for moving said package laterally and inverting the same comprising a chute arched convexly in the direction of movement of said package.

Cosmetic Container, A. Auerbach (to F. N. Burt Co., Inc., Buffalo, N. Y.). U. S. 2,394,961, Feb. 12. In a cosmetic container, in combination, a tube having a slot forming opposed longitudinally disposed elongated guiding edges, a second tube telescoping with the first and having a helical groove with guiding walls, a cosmetic carrier mounted for longitudinal projection and retraction in the inner of said tubes, and a box-like propelling lug on said cosmetic carrier.

Dispenser for Sheet Material, C. A. Flood (to Dennison Mfg. Co., Framingham, Mass.). U. S. 2,394,991, Feb. 19. A package comprising a strip of tape and sheet material temporarily adhering to one side of the tape, a container having an outlet through which the strip may be pulled.

Sheet Material and Seam Construction, C. A. Southwick, Jr. (to Shellmar Products Co., Mount Vernon, Ohio). U. S. 2,395,077, Feb. 19. A method of making bags comprising applying a coating of heat sealing adhesive to a web of fibrous material, marginally piercing said web to provide multitudinous openings therein without removing any material therefrom in a manner to disrupt and fringe said web and to expose numerous fibrous tentacles throughout each of said openings.

Parenteral Bottle Construction, J. E. B. Shaw, Chicago, Ill. U. S. 2,395,149, Feb. 19. A parenteral bottle comprising a hollow container portion having an open mouth, a plug of pierceable rubber material sealing the open mouth of said container portion, said plug having a sterilized top portion, a rubber covering member having a sterilized bottom portion positioned against said sterilized top portion of said plug and maintaining it in sterilized condition.

Strip Roll Sealing Machine, E. M. Kile and S. Kain (to Jone E. Fast & Co., Chicago, Ill.). U. S. 2,395,125, Feb. 19. In a machine, means for drawing forward and winding up strip material into the form of a compact roll, and means for holding a binding strip adapted to encircle and seal the roll.

Device for Supporting Packaged Articles and the Like, A. Eilersgaard (to The Patent and Licensing Corp., New York, N. Y.). U. S. 2,395,176, Feb. 19. In combination with a hollow roll, a device for supporting packaged articles within said hollow roll, comprising a unitary piece of foldable material, forming a container having a bottom member, side and end members hinged thereto.

Support for Heat-Treating Container and Closure Therefor, H. H. Harris, Champaign, Ill. U. S. 2,395,182, Feb. 19. A work container for use in a heat-treating furnace having rails therewithin, the container having an opening thereinto, a pair of inturned lips on opposite sides of the container reducing the size of the opening, a closure for said opening said closure comprising a plurality of plates pivotally secured together in horizontal alignment.

Method and Apparatus for Forming Screw Caps, L. G. Zesbaugh (to Perma-Seal Closure Co., St. Paul, Minn.). U. S. 2,395,209, Feb. 19. An apparatus for forming a screw cap, said cap having a top and a peripheral relatively thick flange having in combination, a female die having a recess therein with a cylindrical wall and a flat rigid bottom extending at right angles to said wall, a male die adapted to move into said recess to within a slight distance from the bottom thereof and having peripheral ribs adjacent its end, said cap being disposed in said recess with its top engaging said bottom.

Box Making Machine, E. G. Staude and P. E. Fischer (to E. G. Staude Mfg. Co., St. Paul, Minn.). U. S. 2,395,352, Feb. 19. In combination with a machine of this class, means for feeding preformed box blanks along a predetermined path, a mechanism for applying a pouring spout patch to each blank.

Container, B. M. Williams (to Gaylord Container Corp., St. Louis, Mo.). U. S. 2,395,363, Feb. 19. A carton comprising a body and a cover therefor, said body having a wall with a hand hole therethrough, and said cover having a corresponding wall with a locking flap that is bent inwardly through said hand hole into said body, the cover wall and said locking flap being slit to provide a relatively long pull tab that is bent inwardly with said locking flap.

Container, B. M. Williams (to Gaylord Container Corp., St. Louis, Mo.). U. S. 2,395,364, Feb. 19. A carton comprising a body having a bottom panel with upstanding end flaps and side panels with end flaps that are bent inwardly from opposite sides of said body into substantially edgewise abutting relation to form with said bottom panel flaps having hand holes therethrough and side panel flaps having portions that are disposed alongside the inner faces of the bottom panel flaps and cover the hand holes therein.

Sheet-Feeding-and-Marking Method and Machine, L. L. Matthews (to Maxson Automatic Machinery Co., Westerly, R. I.). U. S. 2,395,490, Feb. 26. A machine having in combination, means for gripping the head of each of a plurality of sheets, means for advancing the gripping, means to feed the sheets, means for limiting the advance of the gripping means, means disposed in advance of the limiting position of the gripping means in the path of advance of the sheets.

Composition for Lining the Joints of Sheet Metal Containers, J. E. Robinson and I. W. Millelot, Jr. (to American Can Co., New York, N. Y.). U. S. 2,395,502, Feb. 26. A gasket lining composition for lining the joints of sheet metal containers which must hold cleaning fluids and the like, consisting essentially of a homogeneous mixture of alcohol soluble zein and cellulose nitrate, glycol phthalate as a plasticizer, titanium dioxide and carbon black as a filler and coloring material.

Means for Wrapping and Sealing. K. E. Bemis, Oakland, Calif. U. S. 2,395,531, Feb. 26. Means for wrapping patties coincident with the forming thereof and including a patty former, in combination; step conveying means; there being two webs of thermoadhesive wrapping material in superposed relation with the patties formed therebetween in series and transported by said step conveying means.

Holder for Lipsticks and the Like, W. B. Crane (West Los Angeles, Calif.). U. S. 2,395,535, Feb. 26. In a cosmetic holder, the combination of a barrel having an open forward end and having a longitudinal slot extending from a point near its said forward end through its rearward end, a cosmetic cup inside the barrel, a sleeve relatively rotatable around and slidable along said barrel.

Stacking and Nesting Boxes, L. A. Fordon, Detroit, Mich. U. S. 2,395,542, Feb. 26. In a stacking box adapted for nesting, the combination of a bottom frame, side and end walls connected to said bottom frame to swing outwardly to an inclined nesting position, and stacking bars mounted on the end walls to swing to the outer sides thereof and swingable over the side walls.

Carton, S. Lighter, Milwaukee, Wis. U. S. 2,395,558, Feb. 26. A carton comprising, a series of hingedly connected walls forming a collapsible article embracing band, each of said walls having integral continuous article engaging flanges extending along its opposite edges.

Sealing Apparatus, G. H. Fry and W. J. Beck, Hyde Park and Yonkers, N. Y. U. S. 2,395,387, Feb. 26. In a sealing apparatus, a pair of oppositely disposed jaws for clamping therebetween the material to be sealed, one of said jaws being stationary, the other one being movable.

Container and Support, M. M. Tierney, St. Paul, Minn. U. S. 2,395,592, Feb. 26. A container made of sheet material and being of general parallel-piped form having one large side thereof provided with a slit forming a flap, said slit extending from one long edge of said side into said side and to one short edge thereof, whereby said container may be placed over a flat plate-like support adapted to fit against the inner top side and inner side of one end of said box.

OLD DOMINION approaches your packaging professionally: a complete service that analyzes your product and problems, and scientifically solves them — assuring you the right box for the job. Whether you require set-up, spiral wound, corrugated or folding boxes, our packages offer the best features for shipping, safety, and selling. Old Dominion's forty years of experience, product research, and an able engineering staff, plus nine plants strategically located, are at your service.

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For your Information

(*Continued from page 182*) of rust preventives. Protective coatings and industrial chemicals produced by the **Nox-Rust Chemical Corp.** is presented in the firm's newly issued catalog. Copies will be sent on request to the company, 2423 S. Halsted St., Chicago 8, Ill.

A history of the firm's organization and a revealing analysis of the industrial chemicals produced by **Rohm & Haas Co.**, Philadelphia, Pa., and its associated companies are presented in **"Chemicals for Industry,"** a book recently published by the company. Leather, textile, agricultural and rubber chemicals, plastics, opacifiers and enzymes are described in detail and illustrated with production and end-use photographs. The well-bound book also contains a glossary of product names.

Practical color information in concise, non-technical language is available from the **Color Research Institute of America,** 415 N. Dearborn St., Chicago 10, Ill., in a set of 24 releases on **Color Power** based on the Institute's research. The releases are divided into five units, one Basic Unit on **"The Power of Color"** and the other four on the specific subjects of Packaging, Displays, Publications Advertising, and Direct Mail. The set of five units is priced at $25; the Basic Unit plus any one of the other four is $15, and the Basic Unit plus any two of the other four is $20.

Complete description of the new 1946 **Speedlift** belt conveyor is contained in a two-page bulletin, SL-246, recently issued by **Speedways Conveyors, Inc.** Copies will be sent on request to the company's offices at 3090 Main St., Buffalo 14, N. Y.

The basic mechanics of gravure printing are outlined in a booklet, **"Rotogravure Printing,"** recently published by **Gotham Ink & Color Co.,** Long Island City 1, N. Y. Attention is given to materials to be printed and to printing inks. Copies of the booklet may be obtained from the Gotham Co.

Printing Industry of America, Inc., trade association of the commercial printing industry, has re-affirmed the trade customs of that industry which have been in existence for over 50 years and, at the same time, has included the recognized trade customs of the lithographic field to cover all commercial printing transactions. Copies of the trade customs are being distributed to the 37,000 printers in the country, who will bring them to the attention of all buyers.

As a formula for successful packaging, **Roger R. Wilterding,** of the **Ace Carton Corp.,** in a recent address before the **Chicago Professional Paper Group,** pointed out the need for directness, simplicity and remembrance value, use of comprehensive pictures and appealing colors in package design, and the necesssity for giving more attention to shape and size of containers.

The application of its **"Griptop"** conveyor belt in difficult conveying problems is explained in a new pamphlet just published by **The B. F. Goodrich Co.,** Akron, Ohio. Copies are available on request to the company.

In a move designed to coordinate procurement by the Army and Navy, the entire procurement division of the **Jersey City Quartermaster Depot** is being moved to the **Army-Navy Purchasing Offices** at 111 E. 16th St., New York City.

The Paper Shipping Sack Mfgrs. Assn. has been awarded the **Navy Certificate of Achievement** in recognition of the meritorious contribution by its members to the war effort.

Annual sales of flexible packaging now stand at $100,000,000 but are expected to reach $250,000,000 within a decade, according to **Edward M. Rickel,** chairman of the public relations committee, at the annual sales convention of the **Flexible Packaging Institute** in New York. Speak- (*Continued on page 190*)

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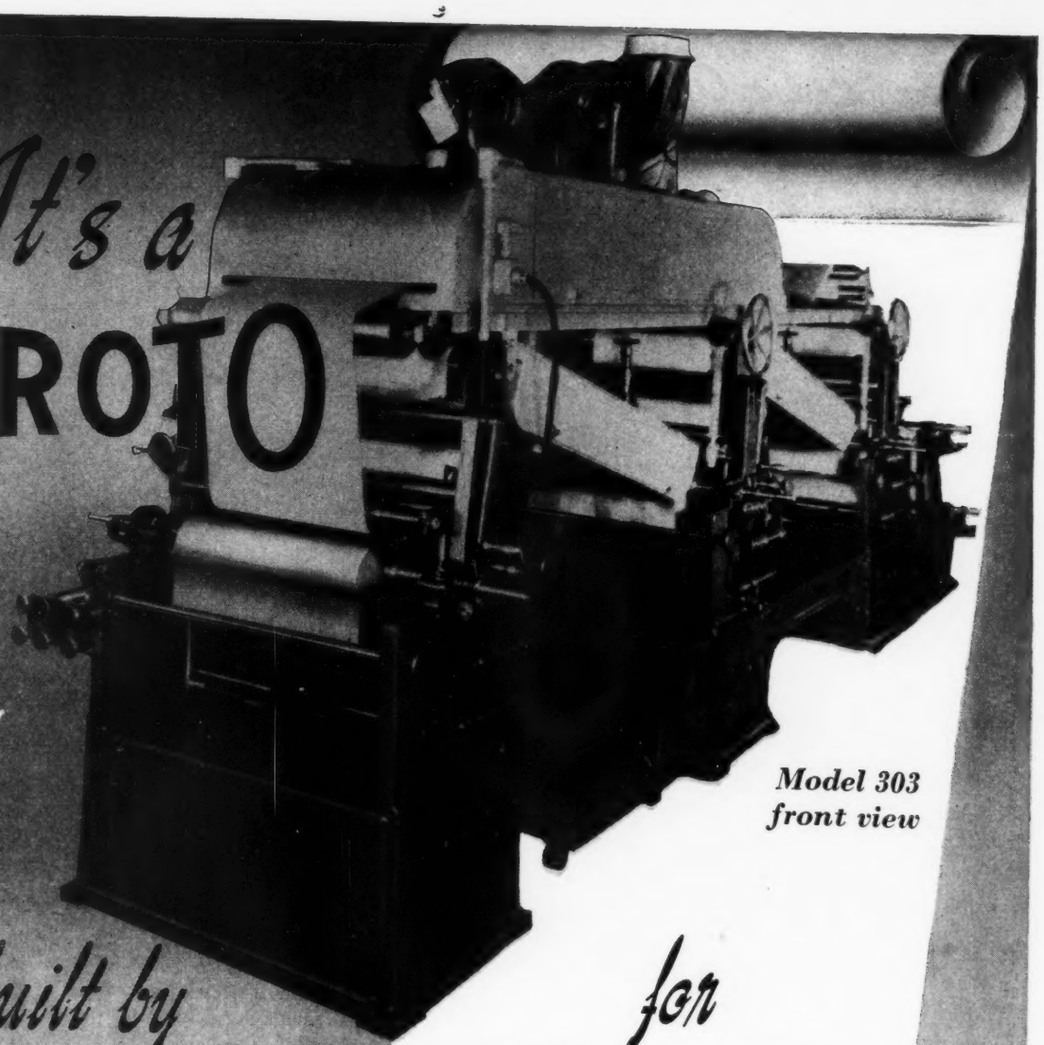

Model 303
front view

built by

ROTOGRAVURE ENGINEERING CO.

A Subsidiary of
Miller Printing Machinery Co.

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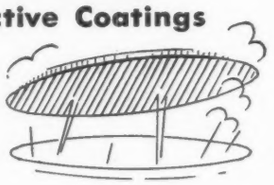

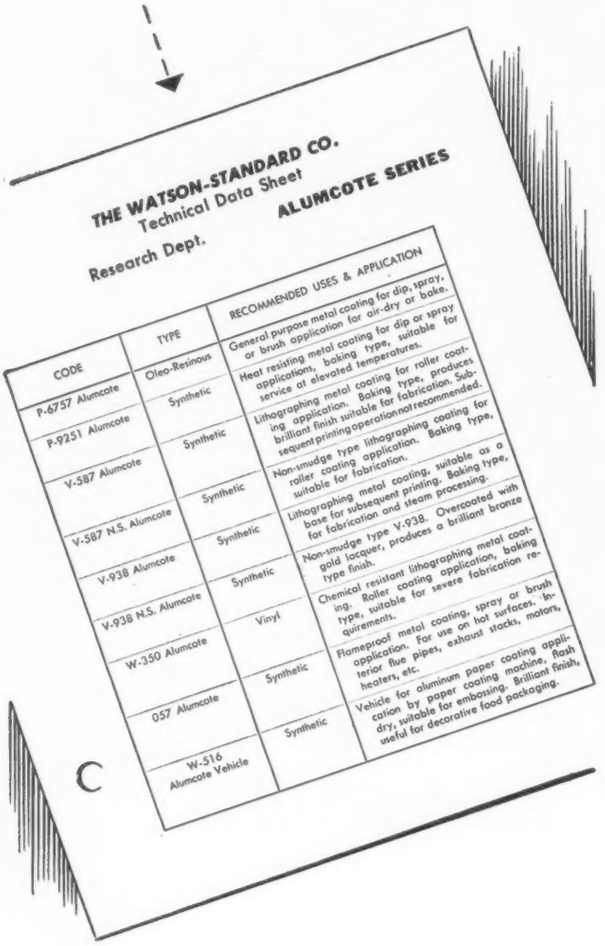
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Technical Data Sheet
Research Dept.
ALUMCOTE SERIES
CODE
TYPE
RECOMMENDED USES & APPLICATION
P-6757 Alumcote
Oleo-Resinous
General purpose metal coating for dip, spray, or brush application for air-dry or bake.
P-9251 Alumcote
Synthetic
Heat resisting metal coating for dip or spray applications, baking type, suitable for service at elevated temperatures.
V-587 Alumcote
Synthetic
Lithographing metal coating for roller coating application. Baking type, produces brilliant finish suitable for fabrication. Subsequent printing operation not recommended.
V-587 N.S. Alumcote
Synthetic
Non-smudge type lithographing coating for roller coating application. Baking type, suitable for fabrication.
V-938 Alumcote
Synthetic
Lithographing metal coating, suitable as a base for subsequent printing. Baking type, for fabrication and steam processing.
V-938 N.S. Alumcote
Synthetic
Non-smudge type V-938. Overcoated with gold lacquer, produces a brilliant bronze type finish.
W-350 Alumcote
Vinyl
Chemical resistant lithographing metal coating. Roller coating application, baking type, suitable for severe fabrication requirements.
057 Alumcote
Synthetic
Flameproof metal coating, spray or brush application. For use on hot surfaces. Interior flue pipes, exhaust stacks, motors, heaters, etc.
W-516 Alumcote Vehicle
Synthetic
Vehicle for aluminum paper coating application by paper coating machine. Flash dry, suitable for embossing. Brilliant finish, useful for decorative food packaging.

Watson-Standard's postwar aluminum finishes, incorporating the latest war proved scientific advances in the field of organic protective coatings, are now available. Brilliant, smooth aluminum finishes on steel, tinplates and many other surfaces are now made possible with this versatile series. Write today for a copy of the Alumcote Technical Data Folder.

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For your information

(*Continued from page 188*) ers were **Gordon H. Friend**, president of the Institute; **Dr. Frank Campins** of **National Adhesives; A. V. Shannon** of **Westfield River Paper Co.; Christopher W. Browne,** editor-in-chief of MODERN PACKAGING; **Stanley B. Wildrick** of **Wildrick & Miller** and **Dr. Charles F. Roos, New York economist.**

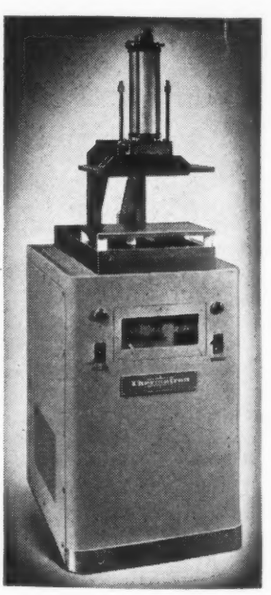
CORRECTION—A notice in the March Plants & People department should have read "The well-known name of Clapp & Poliak, Inc., will again put in its appearance as a firm serving the packaging field in connection with exhibits. Offices will be at 37 Wall Street, New York 5, N. Y. Convention exhibits to be handled will include the American Management Assn., Packaging Exposition and Conferences; also the following: Society of the Plastics Industry, April 22–27, New York City. National Confectioners' Assn., June 1946, Chicago. American Bottlers of Carbonated Beverages, 1947, Atlantic City. National Dry Good Institute, June 1947, New York City. Master Brewers' Assn., September 1947, Cleveland.

Equipment and materials

(*Continued from page 176*) machine is in operation. Recommended speed is from 50 to 55 packs per minute.

The machine, known as the May-Plex, is available in two models—one to handle square crackers and the other designed for round crackers. Widths or diameters of the crackers which the machine handles can range from $1\frac{5}{8}$ in. to 2 in. A machine set up for one size or shape is automatically flexible to approximately $\frac{1}{8}$ in. to handle odd-shaped crackers without breakage; also adjustable for packages from $1\frac{1}{2}$ in. to $2\frac{5}{8}$ in. in length.

ELECTRONIC HEATSEALER

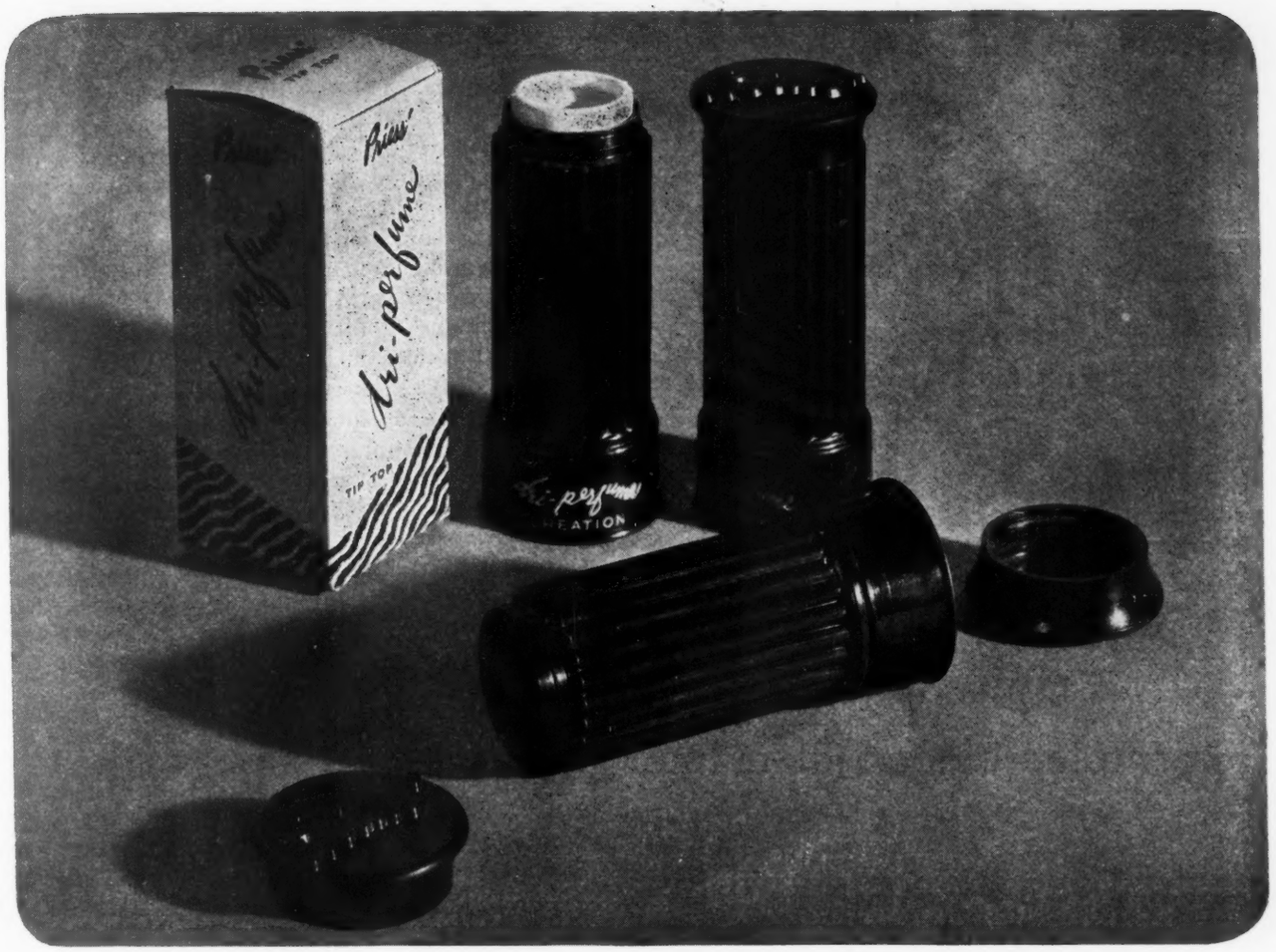


During the war, Thermatron electronic di-electric heat generators made by Radio Receptor Co., Inc., New York, were used to fabricate desalting bags for the Armed Forces, without the use of adhesives or solvents. Now this sealing equipment may be used for the fabrication of bags, covers, liners, etc., from such thermoplastic sheets as Vinylite and Koroseal. The accompanying photograph illustrates a 1 KW Thermatron unit. The press mounted on top of the unit is designed to accommodate interchangeable electrodes of such sizes and shapes as may be required.

Films or sheets of thermoplastic material are held in position under pressure, and by the application of radio frequency power sufficient heat is generated in the material and at the contacting surfaces to cause them to flow together. The result is a seam that is actually a weld or bond that is air-tight and water-tight.

INSULATED BLANKETS FOR SHIPPING FROZEN FOODS

Blankets with Fiberglas interlining made by Aeronautical Supplies, Inc., New York, are now available, in any size or shape for the transportation of frozen foods by freight or truck. These blankets should also prove useful in the delivery of frozen foods from warehouses when refrigerated trucks are not available. Duck or vinyl-coated styles are available with waterproof linings.



LOOKING FOR THE PLASTIC THAT FITS YOUR JOB?

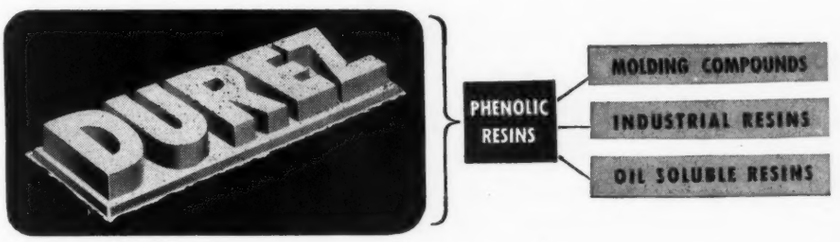
The unusual merchandising value of a plastic container has long since been proved. For this reason, probably no field has made more profitable use of plastics than packaging.

Of the many different types of plastic materials, the phenolics offer the widest range of inherent properties—accounting for their extensive use throughout this industry.

For example, Durez phenolic molding compounds are now being successfully utilized in numerous items ranging from the attractive "Dri-Perfume" container illustrated to bottle closures. In fact, more closures have been made from Durez than from any other plastic material.

A few important characteristics of Durez phenolic compounds are eye-appealing, non-bleeding finish, excellent moldability, impact strength, and resistance to heat, moisture, mild acids and alkalies.

As specialists in the production of phenolic plastics for the past quarter century, Durez laboratory technicians are extremely well equipped to help you find the plastic that fits your job. Durez Plastics & Chemicals, Inc., 254 Walck Road, North Tonawanda, New York.



PLASTICS THAT FIT THE JOB

To complete a good job of fine design, engravings and printing . . . specify MAC SIM BAR boxboard, an important part of the finished product.

MAC SIM BAR
Paper Company

OTSEGO, MICHIGAN PHONE KALAMAZOO 5500
CHICAGO, 228 N. LaSALLE PHONE CENTRAL 1798

Cracker operation . . .

(*Continued from page 106*) by 3¼ in. in size. The design on front and back panels is so arranged that when a number of the cartons are lined up side by side, an unbroken pattern of Crack-ettes is produced, permitting striking display effects. A close tie-up between the package and the 16-page recipe booklet is achieved by using the same design on the booklet cover as on the carton, with minor changes. The recipe booklet contains 17 full-color illustrations, including 12 full-sized pictures of canapes.

Opening of the package is facilitated by the fold-in top, in combination with a notch in which a finger may be inserted to exert pressure on the flap and break the glue seal. By this arrangement, the package can be firmly re-closed, since the top is not destroyed in opening. The top of the glassine liner is folded shut, rather than heat-sealed, so that it will not be broken in opening and can be easily reclosed.

CREDITS: *Carton forming and lining machine and triple-fold closure machine by Battle Creek Bread Wrapping Machine Co., Battle Creek, Mich. Vibratory feed weighing and filling machines, Triangle Package Machinery Co., Chicago. Carton designed by Olsen & Williams Co., Chicago, and produced by Michigan Carton Co., Battle Creek, Mich.*

Best folding boxes . . .

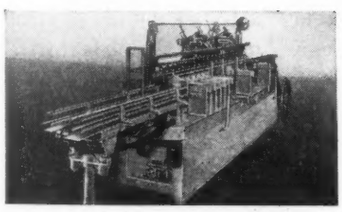
(*Continued from page 113*) U. S. Printing & Lithograph Co., Cincinnati, Ohio. A. E. Murphy, Chicago, was again named executive director of the association.

Opening of the general sessions on March 14 was preceded the day before by an industrial relations seminar. Among the topics covered by speakers or reviewed by committees at the general sessions were labor relations, printing equipment, the industry outlook, research activities, stock boxes, accounting practices, inks for packaging, public relations, statistics, paperboard, glue machinery and legal developments.

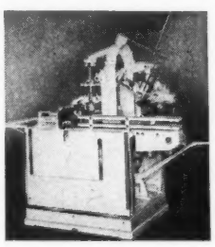
Speaking on "Our Job Ahead," F. S. Symington, National Folding Box Co., cited as some of the principal problems facing the folding box industry "the shortage of skilled help, the necessity of obtaining increased productivity from present equipment, inability to secure new equipment, and more informative operating control as a means whereby general efficiency can be improved." He advocated the development of a formalized apprenticeship training program as the best method of meeting the shortage of skilled help, along with rearrangement of present equipment to maintain efficiency of operation and to make room for additional equipment if necessary.

With reference to package developments, the speaker stated that amorphous or crystalline wax provides one of the best moisture-vaporproof barriers of any currently available material and predicted that amorphous

deserves the best application the WORLD can give



The WORLD BEE-LINE Labeler applies front labels, front and back labels and often neck labels too, if desired, to containers of a wide variety of sizes and shapes.



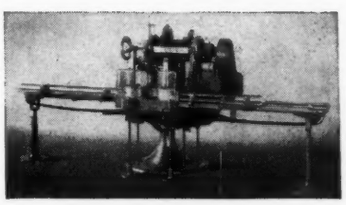
The WORLD TURRET Labeler does extra fine labeling of smooth, fluted or fancy round containers.

You don't have to fit your production, your containers, your labels to the Labeler. There is a WORLD Labeler to fit the job — in the one best and most economical way.

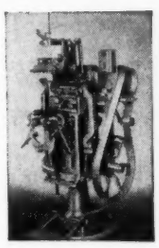
That is why it will pay you to keep in touch with the WORLD. No matter how simple or how specialized your requirements, you can depend on it that the WORLD Labeler recommended for the job, will be the *right* Labeler for the job — because only WORLD builds all sizes and types.

Why not tell us about your labeling problem or, better yet, send us samples of your labeled containers and let us submit detailed recommendations and estimates.

WORLD LABELERS



The WORLD ROTARY Labeler applies body labels, neck labels, and foil if desired, to all kinds of round bottles and jars.



The WORLD Semi-Automatic Labeler applies body labels, neck labels, foil, all-around labels to any size container from ounces to gallons.

"YOU GET THE BEST LABELERS IN THE WORLD"

ECONOMIC MACHINERY COMPANY

Builders of World Automatic and Semi-Automatic Labelers for Every Purpose

WORCESTER, MASSACHUSETTS

New York Philadelphia Pittsburgh Chicago San Francisco Denver
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Montreal Toronto Winnipeg Spokane Vancouver Mexico City
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for Free-Running Frozen Foods

FASTER FILLING
AND PACKAGING

FMC

CARTON FILLER
with Opener and Closer

Careful tests and on-the-job runs show that this combination of the FMC Automatic Filler and Cartons designed for automatic handling can *Double* production, with one-third or less of normal hand-pack crew! For details Write, Call or Wire us today.

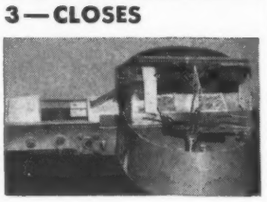
Also send for FMC catalog of all types, food-processing machinery and equipment.

AUTOMATICALLY

1—Sets Up Cartons

2—FILLS

3—CLOSES



CF-201

Food Machinery Corporation
SPRAGUE-SELLS DIVISION • Hoopeston, Illinois

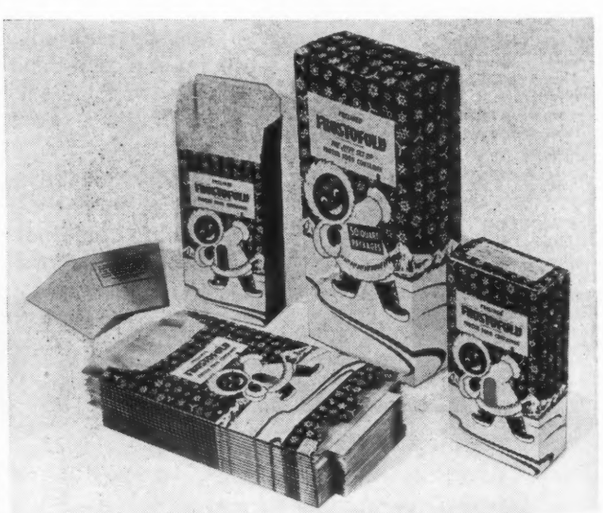
wax laminated board would open up many new fields where such protection is required. Recently developed "siftproof" carton designs, he said, in combination with laminated board, should enable the carton manufacturer to enter fields practically denied to him heretofore. It is quite possible, he declared, that laminated foil may be available later in the year at prices which will make the use of this material attractive.

Mr. Symington said that gravure printing, in its infancy as far as use on folding boxboard is concerned, appeared to have an interesting future, particularly on high-grade, multicolor work where third dimensional effects are desired and where delicate shading is required. Wartime developments in plastic printing plates, rubber plates and waterproof adhesives were also cited as meriting study.

"It is important," stated Mr. Symington, "that our 'packaging engineers' have an understanding of practical production operations, supplemented with a sound knowledge of selling, marketing and merchandising methods, in order that the salesman may advise his customers intelligently and demonstrate to them how they can use packaging, of the kind we can make profitably.

"We also suggest that there is a critical need for better visual aids in the form of photographic albums, drawings, and concise specifications for salesmen to use in proving the value of well-planned packages. These visual aids should be of such a type as to enable the salesman to point out to his customer details of structural design as well as sales and merchandising features."

New locker boxes



The Interstate Folding Box Co., Middletown, Ohio, has redesigned its entire line of pre-lined "Frostofolds"—frozen food containers promoted especially for home use—supplementing it with attractively printed display packages for the retail trade. In addition, the Frostofold food packaging kits, containing all the packaging necessities for the home freezer, now features the newly designed packages.

Same jar—different label. With a change of dress you can use the same H-A jar for many different products.

H-A Glass Containers are designed not only for packing efficiency but to complement smart labeling.

Hazel-Atlas Glass Co.

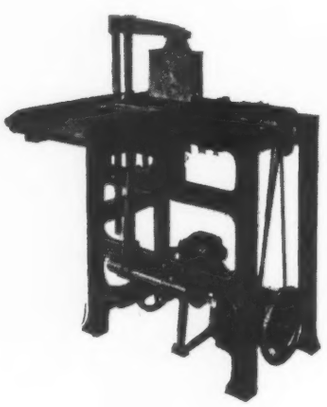
WHEELING, WEST VIRGINIA

TO CUT COSTS IN CARTON PACKAGING

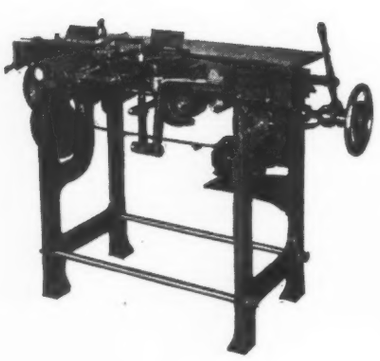
Are you finding that present hand methods of carton setup and closure are showing high costs? Do you want to cut these costs—save time—increase overall profits?

PETERS economical packaging machines are doing this in many plants every day! They are releasing hand labor for other necessary jobs.

Send us a sample of the various cartons you are now using. We will gladly make recommendations for your specific needs.



This PETERS JUNIOR CARTON FORMING AND LINING MACHINE sets up 35–40 cartons per minute requiring only one operator. After the cartons are set up, they drop onto a conveyor where they are carried to be filled. If several size cartons are desired to be handled, machine can be made adjustable.



This PETERS JUNIOR CARTON FOLDING AND CLOSING MACHINE closes 35–40 cartons per minute, requiring no operator. After cartons are filled, they enter machine on conveyor and are automatically closed. Can also be made adjustable to handle several different size cartons.

PETERS MACHINERY COMPANY
GENERAL OFFICE AND FACTORY
4700 RAVENSWOOD AVENUE, CHICAGO, ILL.

Propionate treatment

(*Continued from page 169*) able-handling, resulting in somewhat irregular surfaces and (2), wrapped by hand which left much to be desired with respect to uniform contact between butter surface and parchment.

1. Parchment paper treated in 5% calcium propionate solution acidified to pH 5.5 with lactic acid was fully as effective in inhibiting mold growth on unsalted butter as parchments treated in 10% unacidified solution. Further, butter wrapped in parchments treated in the 5% acidified solution showed marked superiority in keeping quality, as judged by surface flavor over controls or other prints wrapped in parchments treated in unacidified solutions of higher concentration.

2. No advantage was obtained by using a solution consisting of a mixture of either propionate with sodium chloride for the treatment of wrappers. Solutions of either propionate were superior to a saturated solution of sodium chloride for the inhibition of mold.

3. Below 0 deg. F. pre-storage of butter, wrapped in propionate-treated parchment, did not prevent subsequent protection against mold growth on storage at higher temperatures.

4. The calcium-propionate-impregnated parchments were found to be effective only when used in dry wrapping. Immersing such paper in water before wrapping resulted in leaching the propionate from the paper.

5. Heating acidified or unacidified propionate solutions did not impair their effectiveness.

6. The species of Penicillium used was markedly more resistant to the inhibiting effect of the propionates than species of other genera studied.

The authors wish to express their appreciation to A. B. Roppe, Federal butter grader, who assisted in grading butters, and to E. I. du Pont de Nemours & Co., who supplied the sodium and calcium propionate.

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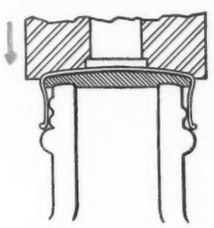
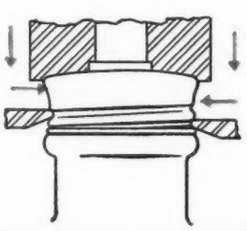
WHY ALSECO R-O SEALS ARE BETTER



1. Plain-skirted Alseco Seal is seated squarely on container. Under stationary top pressure, container lip is embedded in cap liner evenly all around, effecting the seal.

2. While the seal is thus held under pressure, threads are Rolled-On to conform exactly with threads on container. Each seal is tailormade, fits perfectly, seals tighter.



How much freshness and quality of your product do you lose to evaporation while the bottle stands on the dealer's shelf? Alseco R-O Seals cut these losses to a minimum.

In the special Alseco application procedure, the threads of each seal are automatically *Rolled-On* to conform exactly with the threads molded into each container. Each is *tailor-made* to fit perfectly.

Ease of opening is another advantage. Women like Alseco R-O's because they're easy to remove; no prying or pounding is required.

Made of aluminum, Alseco R-O Seals cannot discolor or contaminate your product with rust. And, when lithographed with your special colors and design, they make highly attractive closures.

Write today for details. See how Alseco R-O Seals can do a better job of protecting your products.

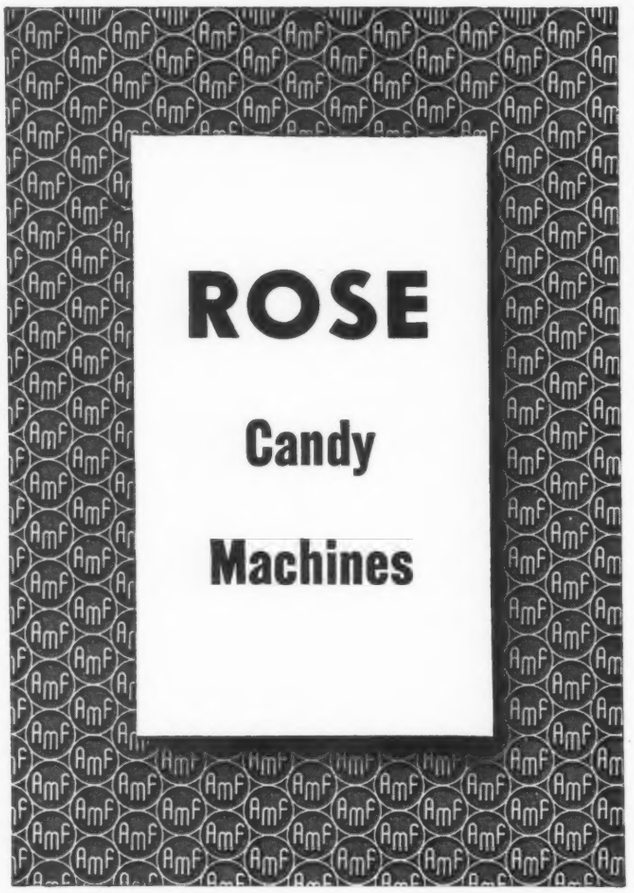
ALSECO

TAILOR MADE OF ALCOA ALUMINUM

SEALS AND SEALING MACHINES

ALUMINUM SEAL COMPANY
SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

NEW KENSINGTON, PENNSYLVANIA
SALES OFFICES IN LEADING CITIES



Approved by Leading Confectioners

ROSE ALBION FLYER — To form, cut and twist-wrap squares, oblongs, or popular rolls — for Hard Candy, Toffee, Kisses, Nougats, etc. **Capacity** — 500 pieces per minute.

ROSE EAGLE — To form, cut and fold-wrap plastics, Caramels, Fudge, etc. **Capacity** — 500 pieces per minute.

ROSE TRIUMPH — To form, cut and twist-wrap fancy-centered pieces, squares, oblongs, or popular rolls—for Hard Candy, Toffee and other plastics. **Capacity** — 500 pieces per minute.

ROSE I.S.T. — To twist-wrap preformed pieces of any irregular shape or size. **Capacity** — Up to 160 pieces per minute.

ROSE HORIZONTAL AUTOMATIC BATCH ROLLER — Automatic spinner and feeder for use with Albion Flyer, Eagle, and Triumph — for plastic materials only.

OTHER ROSE WRAPPERS — For special types of candies — twist-wraps, fold-wraps, or bunch-wraps.

★ ★ ★

FOR COMPLETE INFORMATION WRITE TO

ROSE CANDY MACHINERY DIVISION

AMF AMERICAN MACHINE & FOUNDRY CO. 511 FIFTH AVENUE NEW YORK 17, N.Y.

Paperboard still critical

Although the production of paperboard is currently at a high level and military needs are now negligible it is likely that there will remain a paper shortage for several months according to the Dept. of Commerce.

Shortages in many paper items are the result of unprecedented peacetime demands to meet the tide of reconversion and building needs as well as speculative buying, according to an article prepared by the Forest Products Section, Office of Domestic Commerce, appearing in the April issue of *Domestic Commerce*, an official publication.

Other factors influencing shortages in some grades are the shifting of production to more profitable items and priority needs for products essential in reconverson, it was said.

"The current outlook for wood-pulp imports in 1946 is obscured by the reported intention of Swedish producers to curtail shipments to the United States unless an adjustment is made by OPA in ceiling prices," the article said. "The loss of Swedish supplies, which were in prewar years the largest single outside source for American consumers, would be serious, especially in view of the fact that Finland and Norway, the other important European shippers to the American market, are unable to produce wood pulp at anything approaching prewar levels. Under such conditions, Canada alone would be the chief outside source of wood pulp," the article states.

If domestic production of market wood pulp declines or if Swedish shipments are not on time or fall below expectations, it is probable that some non-integrated paper mills will have to reduce operations.

The importance of Swedish imports is reflected in the fact that Sweden should have available for export during 1946 about 1,700,000 short tons of wood pulp of which the United States might be expected to receive about 1,000,000 tons, it was said.

Another 200,000 short tons of wood pulp can probably be expected from Norway and Finland during 1946, and this, added to expected Canadian shipments of some 1,200,000 short tons, would give the United States total foreign supplies of 2,400,000 tons, the greatest since 1937 claims the Department.

Despite all this, the demand for paper products is so great that waste paper will continue to be a vital necessity as a raw material for the manufacture of new paper and paperboard, and efforts should be made to equal last year's collection total of 6,800,000 tons.

The outlook for the paper and paperboard manufacturers for 1946 is bright Commerce Dept. claims and with abundant assurance that the industry can find a market for all that it can produce. Total paper and paperboard production for 1946 is expected to exceed 18,000,000 tons, but the demand is so great that paper and board mills have been forced to allocate or ration supplies to customers.

BETTER SELLING BEGINS WITH BETTER PACKAGING!

Selling begins with the package, and better selling calls for A.C.M. Clay Coated Cartons. For these famous cartons give any packaged product a better *"sales front."* Their velvet-smooth surface, produced by an exclusive, continuous process, adds luster and brilliance to any design, makes it stand out in today's competition for eye-buying shoppers. Put your product at the head of the sales parade with a better package —an A.C.M. Clay Coated Carton!

AMERICAN COATING MILLS, INC.

Main Offices—Elkhart, Indiana.
Branch Sales Offices—Wrigley Bldg., Chicago;
271 Madison Ave., New York City.
Paper Mills and Carton Plants—Elkhart, Chicago.

MARKS OF A.C.M. SUPERIORITY:

Whiter board—
velvet-smooth surface—more rigid—
tougher—better folding qualities—
superior reproduction in either letter-
press or lithography.

The Secret is in the SURFACE

AMERICAN COATING MILLS

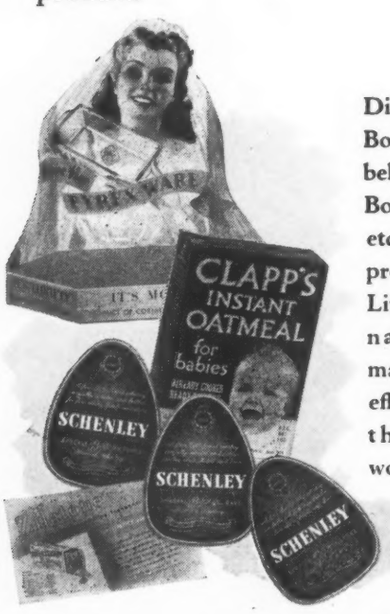
A.C.M. CLAY COATED CARTONS AND CARTON BOARD

AT THE POINT of SALE...

. . . the most convincing speech can not do half as much to secure a buyer as an attractive package. Combined with an attention-getting lithographed counter or window display, it reflects the high quality of your product.

The highly skilled craftsmen of our organization take great pride in producing only the finest in lithography with the most modern of equipment.

Infinite care is given to even the smallest details to assure perfection in the finished product.



Displays, Cut-outs, Box Wrappers, Labels, Folders, Inserts, Booklets, Calendars, etc., created and produced by the Sale Lithograph Co., for nationally known manufacturers do an effective selling job throughout the world.

The SALE LITHOGRAPH CO.

Color Lithographers

208 WASHINGTON STREET BUFFALO 3, N.Y.

Since 1904 Devoted to the Production of Fine Lithography

Food technologists meet

Total registration for the Sixth Conference of Food Technologists held March 18–20 at the Hotel Statler in Buffalo, N. Y., was near the record of 727 set for the Fifth meeting. Technologists and production executives from European countries, Canada, Mexico, South America as well as from all parts of the United States attended.

The program, as planned by the committee chairmanned by Dr. B. E. Proctor, M.I.T., presented 57 papers and reports on various phases of flavor and quality control, processing procedures, plant practices and sanitation and nutrition.

Alban P. Dearing, executive director of the Packaging Institute, emphasized the importance of the Institute's request for standards for packaging frozen foods to eliminate present inadequate processes which "could prove" a hazard to health and could threaten "the sound development of the frozen foods industry."

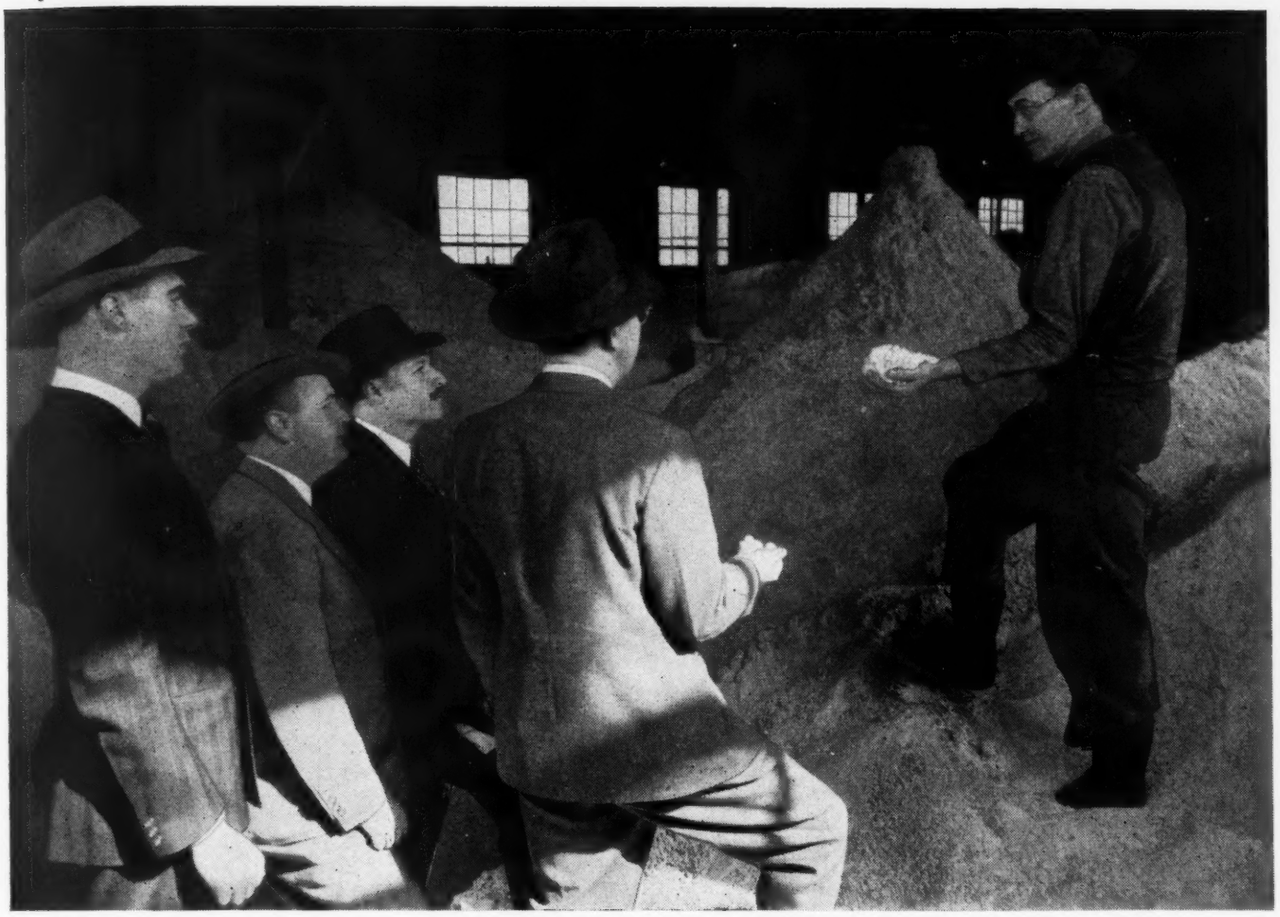
Present "high-volume market frozen" foods, he said, are so packaged as to invite spoilage. He also warned "that the present market would not last forever and that the return to a more normal market will come without warning. The future of the industry, he cautioned, will be in jeopardy as that transition takes place." He added, "frozen foods are still a long way from achieving the complete buyer confidence so aggressively sought and obtained by the canners and packers of heat-sterilized foods."

Paper and other flexible materials offer the more satisfactory containers, he continued, both from a merchandising and advertising viewpoint. He also drew attention to the greater use of aluminum foil to provide faster freezing and, in turn, faster production. New developments in the material, he predicted, will give it much wider acceptance.

Dr. D. Fisher of the Dept. of Agriculture discussed the general principles of long-distance transportation of fresh fruits and vegetables; Charles W. Hauck, Prof. Rural Economics, Ohio University, spoke on "Prepackaging Reduces Food Waste" (MODERN PACKAGING, July 1945, page 89); and "German Wartime Food Processing and Packaging" was the subject of a talk by R. W. Pilcher of the American Can Co.

The newly elected officers of the Institute are: E. H. Harvey, Sun Chemical Co., President; H. C. Biehl, Refrigeration Research Foundation, Vice-President; G. J. Hucker, N. Y. Agricultural Experiment Station, Secretary-Treasurer.

The Northeast Section will hold the Seventh Conference at the Hotel Statler in Boston on June 2–4.



"And be sure to tell them about our sand!"

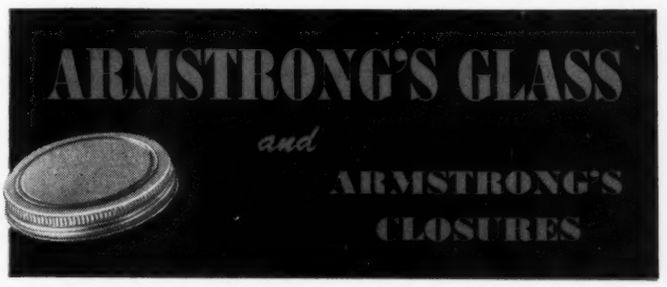
Your Armstrong's Glass representative isn't trained by sales managers alone. During an extensive training course, he gets a lot of valuable technical information about glass—and closures, too—from the skilled veterans who actually make the products in Armstrong's plants. Men like Harry Nitsche.

Harry's specialty is sand. Foreman at the sand pits in Armstrong's Millville, N. J., glass plant, Harry has spent most of his mature life helping to process the sand that goes into Armstrong's Glass.

So naturally, he knows a lot about the special techniques Armstrong has developed in handling sand—the mining, screening, washing, drying, separating (from iron content), the analyzing of hourly samples—which guard the quality of Armstrong's glass sand.

Everywhere your Armstrong representative goes on his training course—glass factory, metal and molded caps plant, crown factory, corks factory—he meets men like Harry—men who have developed through years of experience a practical "know-how" and a craftsman's pride in their work.

The practical working knowledge of glass and closures gained through acquaintance and study with these men helps our Armstrong Glass representatives to do a better, more intelligent job of servicing your glass and closure needs. For information concerning Armstrong's Glass Containers or Closures, write to Armstrong Cork Co., Glass and Closure Div., 5904 Prince St., Lancaster, Pa.



Plants and People

(*Continued from page 180*) offices in the Harwood Bldg., Scarsdale, N. Y., will be expanded and its New York City offices will continue at 101 Park Ave.

Blue River Plastics Mfg. Corp. is the new name of the **F. J. Nussbaum Co.,** plastic fabricators and designers. Offices of the corporation will remain at 473 Hudson Ave., Brooklyn 5, N. Y.

The Brown-Bridge Mills, Inc., manufacturers of gummed papers and sealing tapes, Troy, Ohio, plans a $125,000 addition to its present plant. The expansion will permit relocating present facilities and installing additional gumming and converting equipment for more efficient and increased operations.

Leonard G. Phillipps, recently released from the Navy, has returned to the **Owens-Illinois Glass Co.,** Toledo, Ohio, as manager of the closure sales division. Formerly assistant manager of the closure and plastic sales division, Mr. Phillipps joined the Owens-Illinois organization in 1934.

L. G. Phillipps

The graduate course, **"Pulp & Paper Technology"** offered at the **Polytechnic Institute of Brooklyn,** had as guest lecturer on March 21, **J. D. Malcolmson,** technical director of **Robert Gair Co., Inc.** Mr. Malcolmson discussed the manufacture of paperboard and its conversion into containers and industrial goods. The course consists of 30 lectures given by experts in the field and is under the direction of **Robert S. Aries,** research associate at the Institute.

Sylvania Industrial Corp., New York, makers of Sylvania cellophane, announce the appointment of **Joseph G. Mohlman, Thomas O. Williams** and **Elmer C. Nation** as special representatives of its cellophane division. Mr. Mohlman will work from the New York office, Mr. Williams from Philadelphia and Mr. Nation from Chicago.

American Anode, Inc., of Akron, Ohio, will construct a plant in Los Angeles which will be equipped to make latex mixes for use in the manufacture of all types of latex products such as cord dipping, rubber sundries, paper and textile coating and impregnating. The new plant is expected to be in operation late this year, and production will approximate 4,000,000 lbs. of finished latex compounds annually. A modern testing laboratory will be included in the new plant to assist users with manufacturing problems and in the development of new uses for latex.

Sidney Hollaender, president of the **Ever Ready Label Corp.,** New York, announces the appointment of **Herbert Kaufman** as assistant to the president. Mr. Kaufman, formerly director of advertising, public relations and sales promotion for **General Printing Ink Corp.** prior to his military service, will direct advertising and sales activities of Ever Ready.

Don Grant, lithographic research assistant of the **Harris-Seybold-Potter Co.,** Cleveland, Ohio, conducted an intensive course in color process photography at the **N. Y. Trade School** during the week of March 11–16. The course covered the major technical and practical phases of color process photography as it is used in lithographic reproduction.

W. W. Woodward has been appointed general sales manager of **The Fairfield Paper Co.,** Baltimore, Ohio.

A. S. Bennett Associates, market research service, announce the removal of their offices to **93 Park Ave., New York 16, N. Y.**

Monsanto Chemical Co.'s Montreal subsidiary, **Monsanto (Canada) Ltd.,** has under construction a polystyrene plant which is expected to be in production some time this year. Output at the new facility will exceed Canadian prewar requirements, and it is expected that a considerable portion of the thermoplastic material will be available to foreign markets.

The Champion Paper & Fibre Co., Hamilton, Ohio, announces the opening of a new district sales office in San Francisco to provide direct service to the entire Pacific Coast territory. **Clarke Marion,** vice-president of the company and former manager of the Champion mill at Hamilton will have charge of the San Francisco office, located at 220 Bush St. The Detroit office, in the Fisher Bldg. will be managed by **Herbert W. Suter, Jr. Robert von Maur,** formerly of Champion's St. Louis. sales office, will be associated with Mr. Suter.

The Bemis Bro. Bag Co., St. Louis, Mo., has acquired the property of the **Indiana Cotton Mills** at Cannelton, Ind., according to **Lee Rodman,** president. A new company is being organized to operate the plant and operations will continue without interuption with the mill's present personnel.

The Arabol Mfg. Co., New York, maker of industrial adhesives, has been awarded the **Navy Certificate of Achievement** for the efforts of its employees in support of the war production program.

Chicago Molded Products Corp., plastics molders, have under way an expansion program expected to involve the expenditure of over $1,000,000 by the end of 1947.

Thomas C. Werbe, Jr., has returned from military service to assume his duties as vice-president of **Lynch Corp.,** Anderson, Ind., and its two subsidiaries, **The Lynch Mfg. Corp.** and **Lynch Package Machinery Corp.,** of Toledo, Ohio. He will also head **Wrap-O-Matic** sales for the Lynch Package Machinery Corp., manufacturers of automatic wrapping machines for the bakery fields.

T. C. Werbe, Jr.

Comet Container Corp., manufacturers of corrugated specialties for the glass and cosmetic trade, is now located at **33 34th St., Bush Terminal, Brooklyn, N. Y.**

J. L. Ledeen has joined the **W. A. Hammond Drierite Co.,** desiccant manufacturers, Xenia, Ohio, as manager of engineering sales. Mr. Ledeen was formerly with the **General Electric Co.**

A. Norman Diecks has established offices in the **Court Square Bldg., Baltimore, Md.,** where facilities for metal shipping container technical consultant services are available on problems involving the packing and shipping of industrial products.

Edward R. Phillip has joined the agronomy division of **American Can Co.'s** research and development department. Mr. Phillip, a former lieutenant commander in the Navy, was previously with **Federal State Inspection** services.

O'Roland Read has been appointed director of sales for **Speedways Conveyors, Inc.,** manufacturers of gravity case conveyors, Buffalo, N. Y.

Union Bag & Paper Corp., New York, announces the establishment of two scholarships at the **George Foster Peabody School of Forestry** of the **University of Georgia,** and two fellowships at the **Duke University School of Forestry.**

Expansion of sales of the **Armstrong Cork Co.'s** glass and closure division was the keynote of a conference of the division's district managers held at Lancaster, Pa., home office of the company. Organizational changes in the firm's research laboratories, designed to expand development on glass and closure products, include **K. C. Lyon,** chief of glass research; **J. M. Sharf,** chief of closure research; **Roger F. Scott,** chief chemist.

Marathon Corp., Menasha, Wisc., manufacturers of food packaging materials, has announced the appointment of **John H. Snyder** as sales manager for meat and vegetable oil packaging; **George W. Holt, Jr.,** as resident manager of the Menominee, Mich., plant; and **Karl Koehler** and **Henry Anderson** as sales representatives for the specialty packaging division.

YOU'VE *"Got the Number"* of any PACKAGING PROBLEM

NEW YORK	Murryhill 67898
CHICAGO	Whitehall 5820
AKRON	Blackstone 3176
CINCINNATI	Main 5468
CLEVELAND	Prospect 1540
PITTSBURGH	Atlantic 3505
RITTMAN, OHIO	Rittman 81

The telephone number of any Ohio Boxboard district office puts you in touch with the complete facilities of PLANNED PACKAGING.

That means folding cartons, display cartons, corrugated containers and corrugated specialities, and specialty boxboard.

It means full coordination of cartons and containers due to a *complete* service—manufacture of board, research, design, development, testing, and conversion.

This complete control of every step assures the exacting precision that modern packaging methods and machinery require.

You will find our district representatives resourceful and experienced in meeting your individual packaging requirements.

ARMY E NAVY

O·B

THE OHIO BOXBOARD CO.

RITTMAN, OHIO

Manufacturers of paper board, folding boxes, corrugated and fiber shipping containers, and converted specialties

SALES OFFICES: RITTMAN • AKRON • CLEVELAND • CINCINNATI • PITTSBURGH • NEW YORK • CHICAGO

Capacity 500 tons daily

All These Distributors have KIMPAK Creped Wadding

Check for the one nearest you

(See KIMPAK on facing page)

ALABAMA
Birmingham . Graham Paper Co.

ARIZONA
Phoenix . . . . . Graham Paper Co.

CALIFORNIA
Fresno . . . . . Zellerbach Paper Co.
Los Angeles " " "
Oakland . . . " " "
Sacramento " " "
San Diego . " " "
San Francisco " " "
San Jose . . . " " "

COLORADO
Denver . . . . Carpenter Paper Co.
Denver . . . . . Graham Paper Co.

CONNECTICUT
Bridgeport . . . . Charles F. Hubbs
Hartford . . . . . .
. . . Green & Low Paper Co., Inc.

GEORGIA
Atlanta . . . . . Graham Paper Co.

ILLINOIS
Chicago . . . Bradner Smith & Co.
Chicago . . . . . .
. . . General Shippers' Supply Co.
Chicago . . . . Graham Paper Co.
Moline . . . . . Newhouse Paper Co.

INDIANA
Indianapolis . Crescent Paper Co.

IOWA
Des Moines . Carpenter Paper Co.
Sioux City . . " " "

KANSAS
Topeka . . . . Carpenter Paper Co.
Wichita . . . . . Graham Paper Co.

KENTUCKY
Louisville . . . . Graham Paper Co.

LOUISIANA
New Orleans . Graham Paper Co.

MARYLAND
Baltimore . Hubbs & Corning Co.

MASSACHUSETTS
Boston . . Carter Rice & Co. Corp.
Worcester . . . . . .
. . . . . Charles A. Esty Paper Co.

MICHIGAN
Ann Arbor . . . . . .
. . . . Crown-Ann Arbor Paper Co.
Detroit . . . . . .
. . The Whitaker Paper Company
Flint . . . . . Beecher, Peck & Lewis
Jackson . Crown Paper & Bag Co.
Kalamazoo . . . . . .
. . . . . Bermingham & Prosser Co.
Lansing . . . . . .
. . . . . The Weissinger Paper Co.
Saginaw . . . . . Reid Paper Co.

MINNESOTA
Minneapolis . . Graham Paper Co.
Minneapolis . . . . . .
. . . Stilwell-Minneapolis Division
. . . . . Carpenter Paper Co.
St. Paul . . E. J. Stilwell Division
. . . . . Carpenter Paper Co.

MISSOURI
Kansas City . Carpenter Paper Co.
N. Kansas City . . . . . .
. . . . . Graham Paper Co.
St. Louis . . . . . " " "

NEBRASKA
Grand Island . . . . . .
. . . . . Carpenter Paper Co.
Lincoln . . . . " " "
Omaha . . . . . " " "

NEW YORK
Buffalo . . . . . Hubbs & Howe Co.
Hollis, L.I. . . . . .
. . . . . Hubbs Paper Co., Inc.
New York . . . . . .
. . . . . Charles F. Hubbs & Co.
New York . . . . . Herbert A. Post
Rochester . . . . . .
. . . . . The Alling & Cory Co.
New York J. & F. B. Garrett Co.

OHIO
Cincinnati . . . . . .
. . . . . The Chatfield Paper Corp.
Cincinnati . . . . . .
. . . . . The Whitaker Paper Co.
Cleveland . . . Hubbs & Howe Co.
Columbus . . The Scioto Paper Co.
Toledo . . . . . .
The Ohio & Michigan Paper Co.

OKLAHOMA
Oklahoma City . . . . . .
. . . Carpenter Paper Co. of Okla.
Oklahoma City . . . . . .
. . . . . Graham Paper Co.
Tulsa . . . . . Carpenter Paper Co.

OREGON
Portland . . . Zellerbach Paper Co.

PENNSYLVANIA
Philadelphia . . . . D. L. Ward Co.
Pittsburgh . . . . . .
The Chatfield & Woods Co. of Pa.

RHODE ISLAND
Pawtucket . . . . Service Paper Co.

TENNESSEE
Chattanooga . Graham Paper Co.
Knoxville . . . . " " "
Memphis . . . . " " "
Nashville . . . . " " "

TEXAS
Corpus Christi . Graham Paper Co.
Dallas . . . . . " " "
El Paso . . . . . " " "
Ft. Worth . . Carpenter Paper Co.
Houston . . . . . Graham Paper Co.
San Antonio . " " "

UTAH
Salt Lake City . . . . . .
. . . . . Carpenter Paper Co.
Salt Lake City . . . . . .
. . . . . Zellerbach Paper Co.

WASHINGTON
Seattle . . . . . Zellerbach Paper Co.
Spokane . . . . . .
. . . . Spokane Paper & Staty. Co.
Spokane . . . Zellerbach Paper Co.

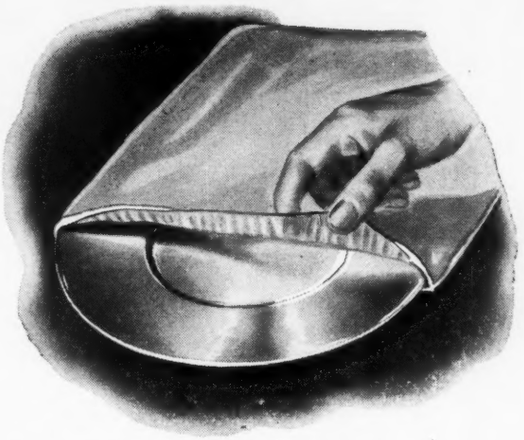
WISCONSIN
Milwaukee . . . . . .
. . . . Wisconsin Paper & Products
Neenah . . . . . Sawyer Paper Co.
Racine . . . . . Service Paper Co.

CANADA
Toronto, Ontario . . . . . .
. . . . F. F. Barber Machinery Co.

KIMBERLY-CLARK CORPORATION
Neenah, Wisconsin

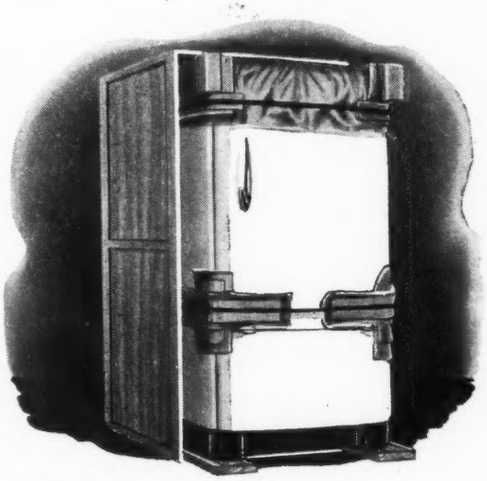
122 E. 42nd St., New York 17 • 8 S. Michigan Ave., Chicago 3
155 Sansome St., San Francisco 4 • 22 Marietta St., Atlanta 3, Ga.

Kimpak* Float Packaging



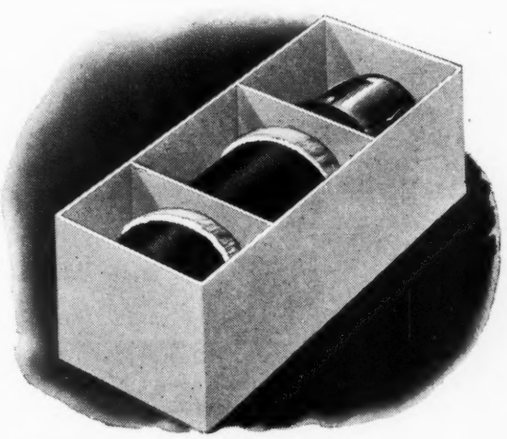
★ **Protects Against Abrasion**

KIMPAK—soft, resilient and clean—safeguards highly polished surfaces and delicate finishes against rubbing, scratching and press-marking. Also, neutral KIMPAK types protect the product from direct contact with chemically active packaging materials. From luxury merchandise to precision-finished parts, products ship better in KIMPAK.



★ **Cushions Jars and Jolts**

KIMPAK Creped Wadding absorbs shocks more effectively than most cushioning materials of far greater density and thickness. Because of its compactness, it often cuts bulk and weight of packages, reduces shipping charges. KIMPAK helps make your package as modern as your product.



★ **Supplements Other Packaging Materials**

Where steel bands, paper board separators, wooden interior bracing or other rigid packaging materials must be used, KIMPAK supplements them with cushioning and surface protection properties. It's muss-free, as easy to handle as wrapping paper, saves time and money in the shipping room.

An illustrated booklet on KIMPAK is now available. For your free copy, see your KIMPAK Distributor or mail a postcard to Kimberly-Clark Corporation, Creped Wadding Division, Neenah, Wis.

*KIMPAK (trade-mark) means Kimberly-Clark Creped Wadding

A PRODUCT OF Kimberly Clark RESEARCH

Kimpak

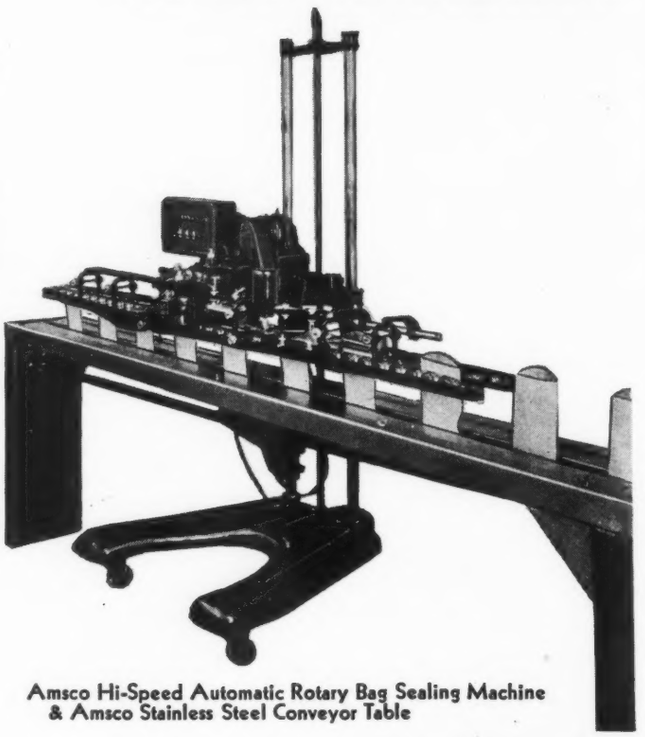
REG. U.S. PAT. OFF. & FOREIGN COUNTRIES

CREPED WADDING

AMSCO FOR YOUR PACKAGING MACHINERY REQUIREMENTS

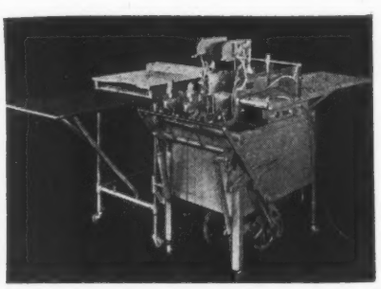
for greater efficiency speed and economy AMSCO offers machinery to perform the following operations:

1. Bag making
2. Bag & carton weighing & filling
3. Bag aligning & conveying
4. Bag sealing
5. Wrapping
6. Sheeting & gluing
7. Sandwich making & wrapping
8. Sealing by hand & foot operated devices — hot plates & sealers

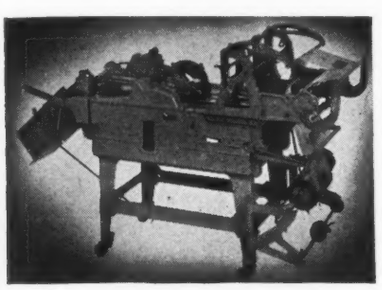


Amsco Hi-Speed Automatic Rotary Bag Sealing Machine & Amsco Stainless Steel Conveyor Table

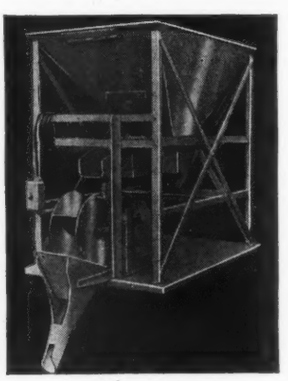
Literature available upon request



Miller Wrapping & Sealing Machine



Simplex Bag Making Machine



Holm Automatic Weighing & Filling Machine

AMSCO PACKAGING MACHINERY, INC.

31-31 Forty-Eighth Ave., Long Island City 1, N. Y. • STillwell 4-4840

Represented in Mid-West — Miller Wrapping & Sealing Machine Co., Chicago 6, Ill.

Represented on Pacific Coast — Simplex Wrapping Co., Oakland 6, Calif.

THIS PRETTY "PACKAGE" IS PROTECTED BY

Du Pont POLYTHENE

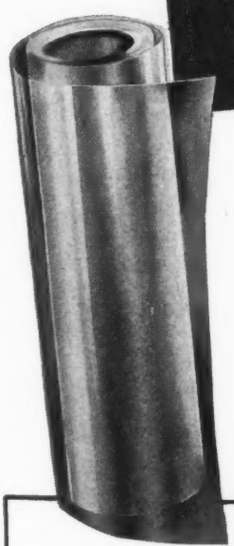
WHY NOT YOURS?

LETTUCE BAG

SHOE PROTECTOR

LINGERIE CASE

Shown (at left) are a few of the many products being made commercially today from polythene sheeting. These polythene protectors keep merchandise clean and fresh.



EFFECTIVE as polythene is for raincoats . . . it can be even more effective as a packaging material. For raincoats do not utilize nearly *all* of polythene's unique combination of properties (see list below). Polythene's high resistance to chemicals, Polythene's toughness and light weight, polythene's imperviousness to moisture . . . these properties offer much to manufacturers who spare no effort to bring their products to the consumer, fresh, clean, attractive. Polythene needs no plasticizer . . . is available in a variety of attractive colors. For working samples and complete data, write E. I. du Pont de Nemours & Co. (Inc.), Plastics Dept., Room 574, Arlington, N. J.

Visit the Du Pont Plastics Exhibit *at the National Plastic Exposition, Grand Central Palace, New York City, April 22-27. See Du Pont Plastics in action, including new developments never before shown.*

PROPERTIES OF DU PONT POLYTHENE

Tasteless, odorless non-toxic

Chemically inert

Flexible and tough at low temperatures

Heat-seals readily

Light in weight (Specific gravity 0.92)

Keeps moisture out (Permeability [3 mils thickness] 30 grams/100 square meters/hour)

Du Pont manufactures polythene molding powder
Commercial extruders convert polythene into the forms of

SHEETS TUBES RODS FILAMENTS

DU PONT
REG. U. S. PAT. OFF.
Plastics
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

IS IT A SURE STOPPER OR A DULL DISPLAY?

Every carton user wants his box designs to look their best. This means the smooth, bright uniformity that comes from a fine coated board like RIDGELO. Cartons with appeal develop easily from the combination of a good folding box maker and a clay coated finish.

Many leaders in drugs, cosmetics, toilet goods, confections, and specialty foods standardize on RIDGELO. It may well belong in your packaging program. Ask to see proofs on this fine quality boxboard and compare!

Ridgelo
CLAY COATED
BOXBOARDS

MADE AT RIDGEFIELD, N. J., BY LOWE PAPER COMPANY

Representatives
H. B. Royce, Detroit • Norman A. Buist, Los Angeles • A. E. Kellogg, St. Louis • Philip Rudolph & Sons, Inc., Philadelphia

Our word, "planalized," may sound like Harlem jive to you. But we coined and use it in the most earnest seriousness.

"Planalized" means that Rossotti Consultants first sit down and *plan* with you your labeling and packaging objectives. Then our research men go into your selling field—survey your competition problems at the point of sale—and our merchandising experts *analyze* the finding.

It's only then that our designers and artists go to work. This gives you, in your labels and packages, that distinctive Rossotti artistic touch which is solidly grounded on practical merchandising principles. The result is a label and package that *sells itself from the shelf!*

May we bring some of these up-to-the-minute, point-of-sale, selling ideas to you? Just call or write us—and discover how much worth while that is!

Rossotti
SINCE 1898

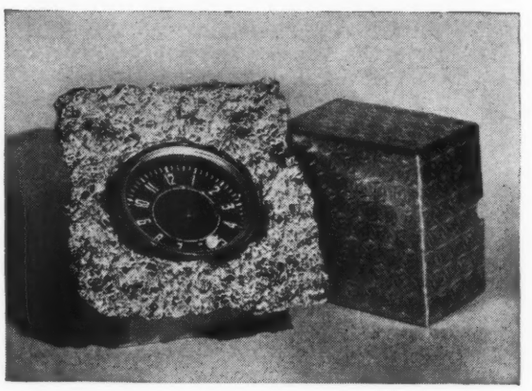
ROSSOTTI LITHOGRAPHING CO., INC. • NORTH BERGEN, N. J.

BOSTON 9, Mass.: 200 Milk Street • ROCHESTER 4, N. Y.: 183 Main Street, East
JACKSONVILLE 2, Fla.: 1106 Barnett National Bank Building • Chicago 11, Ill.: 520 North Michigan Avenue
ROSSOTTI WEST COAST LITHOGRAPHING CORP., 225 California St., San Francisco 11, Cal.

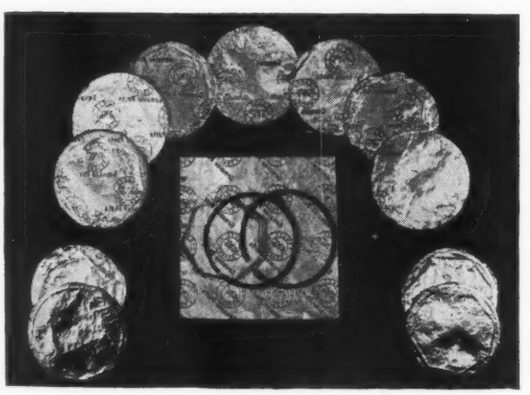
Revolutionary New Packaging

SPARK PLUGS

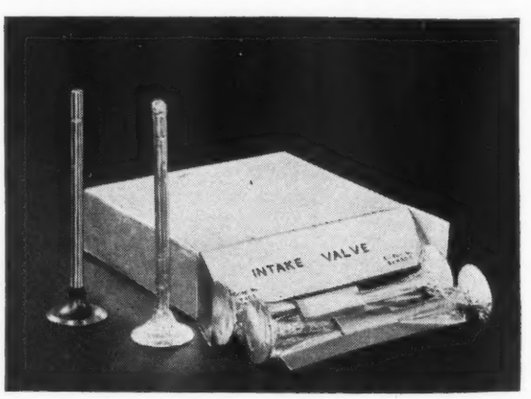
Spark plug is placed on a sheet of Reynolds Aluminum Foil. The foil is then pressed firmly and closely against the plug in an intimate wrap. The foil not only safeguards against moisture and corrosion, but adds attractive "buy appeal" to the article itself.



ELECTRIC AUTOMOBILE CLOCK. Wrapped in aluminum foil for corrosion protection—displayed in embossed foil box for extra sales value.

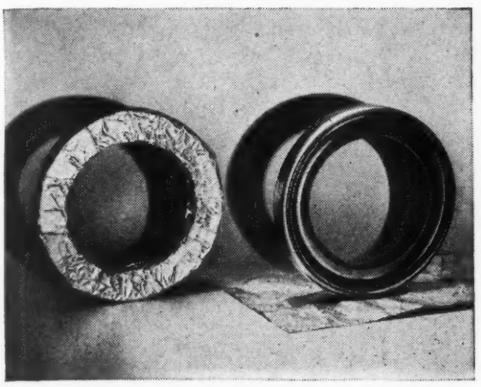


PISTON RINGS. Conforming wrap with name embossed on aluminum foil gives added trade mark protection.

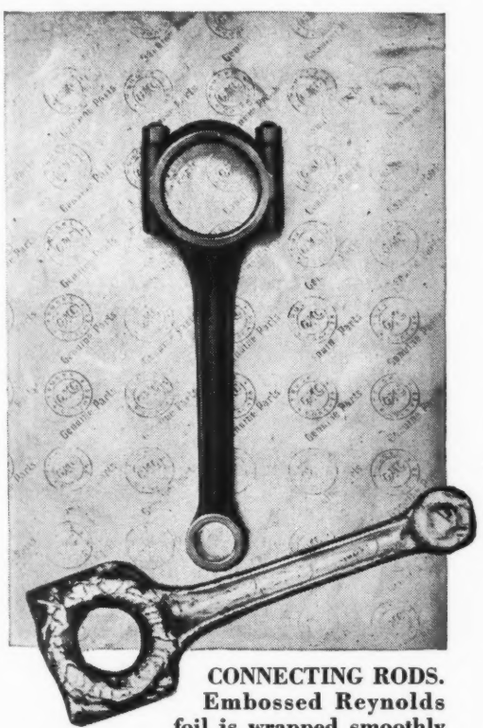


INTAKE VALVES. Each valve is individually wrapped in plain aluminum foil to prevent corrosion. Extra display value is obtained by placing in foil carton.

For METAL PARTS...



OIL SEALS FOR TRUCKS. Doughnut wrapped for protection against contact corrosion. Embossed foil insures trade mark protection.



CONNECTING RODS. Embossed Reynolds foil is wrapped smoothly against surface in a doughnut-type intimate wrap which gives "cathodic protection" against contact corrosion, as well as forming a positive barrier against moisture vapor.

Gives corrosion-proof protection ... plus sparkling sales appeal

WORKING with the Army Medical Corps, Reynolds developed a simple, yet revolutionary new method of wrapping metal parts with Reynolds Aluminum Foil to withstand the most severe wartime conditions.

By actual test, aluminum foil, specially processed by Reynolds, offers these advantages:

1. Acts as a positive barrier against moisture vapor transmission.
2. Provides Cathodic Protection against contact corrosion by developing a counter electro-magnetic force.

Today this same method gives long-wanted protection to peacetime products. The foil can be molded snugly to conform with the shape of the part, squeezing out moisture-laden air and providing "Cathodic Protection" against contact corrosion.

Greater sales allure

In addition, manufacturers can now take advantage of the powerful sales appeal that bright, sparkling foil wrappings offer, and the added trade mark protection when embossed or printed.

Some typical examples are shown here. Many others are available. If you would like complete information about the great new uses for aluminum foil in the modern trend in packaging, write Reynolds Metals Company, Richmond 19, Virginia.

REYNOLDS ALUMINUM

REYNOLDS METALS COMPANY

CRAFT

CRAFT is defined by our dictionary as:

"Art or skill; dexterity, as in some manual employment; aptitude, skillfulness in planning or executing . . . art or skill."

CRAFT

Cameo workmen are craftsmen in the truest sense of the word. Each is trained for many, many years before his work is acceptable on a finished product.

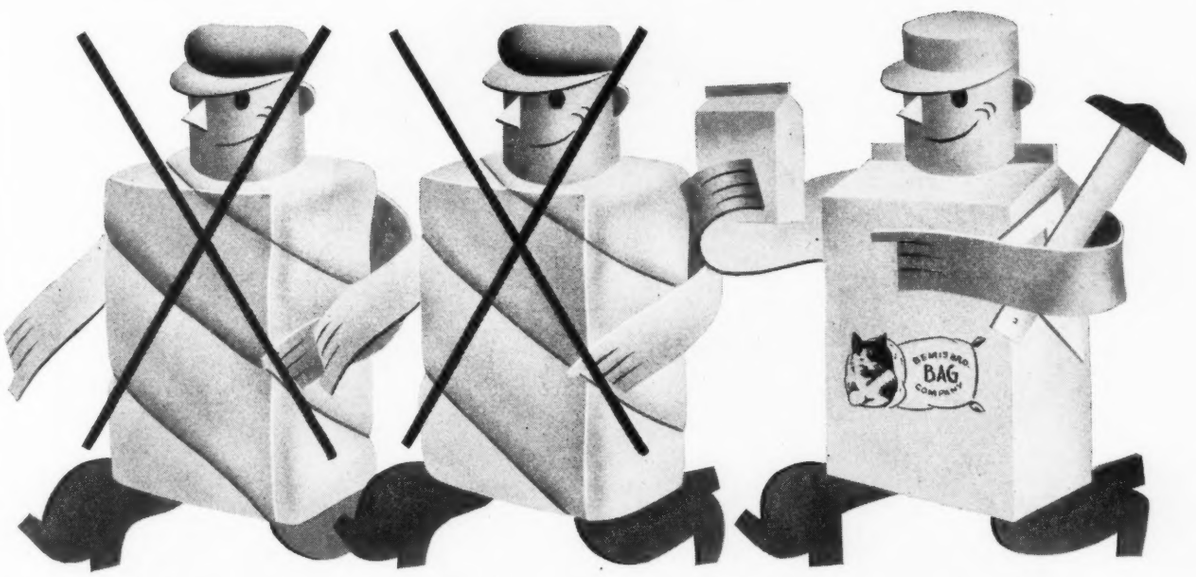
Our designers specialize exclusively in designing labels, seals and tags, utilizing the full richness and beauty of embossing, diecutting and printing, the reproduction processes on which we concentrate. Our diemakers perform the duties of their craft with consummate skill. Every die that they produce is a thing of accuracy as well as of beauty. Our special printing and embossing departments follow through with complete integration, gearing the efforts of both designer and diemaker and turning out a finished product that is without equal in the die and label field.

Send for samples.

IN CANADA: CAMEO CRAFTS INC.
157 ST. PAUL ST. WEST MONTREAL

CAMEO
DIE AND LABEL COMPANY
DESIGNERS and CRAFTSMEN
154 WEST 14th STREET
NEW YORK 11, N. Y.
WATKINS 9-8484

Are you using Three men on a wrapping job



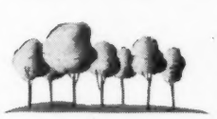
when a special paper bag will do the work of two?

Yes, if you now wrap your product in paper, there is a good possibility that Bemis can develop a bag for your product that will give you savings in time, labor and materials in your packaging department . . . perhaps save the services of two or more men now engaged in wrapping.

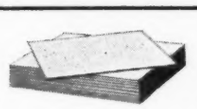
Call Bemis Paper Bag Specialty Division Today

The same Bemis Packaging Specialists whose ingenuity developed bags for the products illustrated, will study your operations upon request. Their recommendations may result in important competitive advantages and savings in packaging costs. Mail coupon for immediate action.

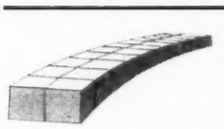
SUCH PRODUCTS AS THESE—NOW WRAPPED IN PAPER —MAY BE PACKED IN BAGS



Trees can now be shipped in special paper bags, instead of being wrapped. Advantages: Faster, easier handling; moisture around roots is retained; longer, safer shipments are possible.



Wallboard—Six sheets, 4′ x 12′, can be slipped into a special paper bag in one simple operation. Advantages: Savings in labor, time, materials, floor space in your packing departments.



100-Pound Cubes of Firebrick—A special paper bag makes this hard-to-wrap products easier and cheaper to package. Other advantages: Original moisture retained longer; quality and shelf-life prolonged; return of goods minimized.

BEMIS BRO. BAG CO.

PAPER BAG SPECIALTY DIVISION • 1054 S. VANDEVENTER, ST. LOUIS, MO.

COUPON

Gentlemen: Please have a Bemis Packaging Specialist call on me. I'm interested in a special paper bag for_____
(product)

*Name*_____

*Firm Name*_____

*Address*_____

*City*_____ *State*_____

The packaging that attracts...

No matter how you phrase it, what you call it—the success back of ACE cartons is *appeal*. An attraction that can whisper or shout to compliment your product—complement your merchandising. Why not consult our design engineers about your future packaging problems? Our highly specialized Design and Creative Department is a valuable part of our integrated service.

ACE CARTON CORP. ACE CHICAGO Creators

ACE CARTON CORPORATION

5800 West 51st Street, Chicago 38, Illinois

FOLDING PAPER CARTONS · FOLDING DISPLAYS · DISPLAY CONTAINERS

THE ROSS WAY IS THE NEW WAY

EFFICIENT...

An efficient feature of the ROSS machine is the simple raising of the top guide board. This is designed for quick clearing of a faulty carton during actual operation. (The ROSS machine averages one in 1500 in carton spoilage). This ROSS cartoning machine is fully automatic for setting up and tucking one end of folding cartons.

The same features are available on the ROSS fully automatic machine *(loading and tucking both ends of either tuck or sealed carton).*

PRECISION PARTS • SELF OILING • DIAL CONTROL
VERSATILE ADJUSTABILITY • MASTER SPEEDRANGER

PAT. APPLIED FOR

A. H. ROSS and Co.

PACKAGING MACHINERY

LUDLOW • KENTUCKY

Put Your Products in PARADE DRESS

Clearsite*

*Reg. U. S. Pat. Off.

Plastic Containers Are UNIFORMS *of Distinction*

SEAMLESS
SHATTERPROOF
FEATHERLITE
imprinted during
manufacturing process

Also manufacturers of
Extrusion and Injection Moldings

Crystal-clear, or colorfully imprinted, there is a distinctive quality in CLEARSITE containers that "dresses up" any product in its parade to the public. Many of the best known Names in drugs, pharmaceuticals, sporting goods and aids to health and hygiene use CLEARSITE—because it is attractive, offers *shatterproof* protection, and production economies.

Our Package Design Engineers are available for Suggestions

CELLUPLASTIC CORP.

CELLUPLASTIC CORPORATION

PLASTIC CONTAINERS
AND
PLASTIC PRODUCTS

40 AVENUE L NEWARK 5, N. J.

NEW YORK OFFICE—630 FIFTH AVENUE WEST COAST: CONTAINER SERVICE COMPANY, LOS ANGELES 27, CAL

She demands to be pleased with what she buys. And it's the attractive, glistening sales-building packages with interesting designs and unusual fabrications that will immediately invite her purchase.

That's why today's packagers turn to A. P. G. Transparent and Opaque Bags and Envelopes for special or stock prints . . . fabrications that are custom-built for their products. They know that merchandise packaged in these specially designed Bags and Envelopes consistently attract the buyer's eye . . . produce the all-important repeat sales.

MEMBER FLEXIBLE · PACKAGING · INSTITUTE · fpi

Our staff includes competent representatives experienced in handling the difficult or unusual packaging problems. They'll be glad to assist you at all times.

APGCo

The American Paper Goods Co.

OVER 50 YEARS OF SERVICE

KENSINGTON, CONNECTICUT — CHICAGO, ILLINOIS

Sales Offices — New York · Chicago · Boston · Philadelphia · Charlotte · Atlanta · Cincinnati · Minneapolis · Fort Worth · San Francisco · Seattle

None of that

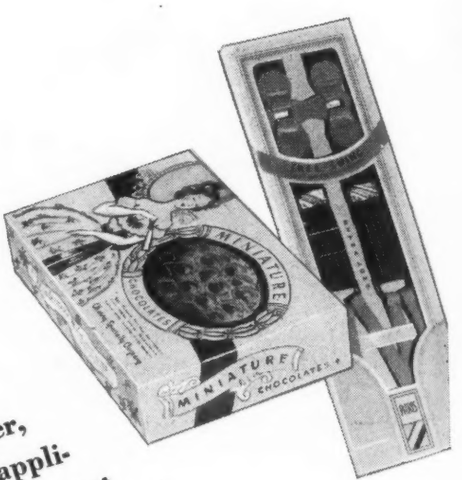
WITH

LAMCOTE

PROTECTIVE BEAUTY

FOR EVERY TYPE OF PRINTED PACKAGE

Protect packages — protect merchandise — protect profits! LAMCOTE does it! Eliminates mark-downs because handling can't damage this tough, transparent covering. Packages retain indefinitely their added gleaming beauty and sales appeal — their fresh, new look. LAMCOTE'S flexible covering strengthens the package, repels grime. This amazing process adds new brilliance and richness to all types of reproduction. Package design is glorified and enlivened to attract shoppers' eyes. Beauty and purity are sealed in. Dust and moisture are lastingly locked out. Merchandise reaches the consumer exactly as it leaves the production line. LAMCOTE is a powerful selling help for manufacturer, boxmaker or lithographer. Investigate the application of this modern, low-cost process to present or prospective packages.



ARVEY CORPORATION

CHICAGO — JERSEY CITY

QUALITY PRODUCTS — METAL PAPERBOARD PLASTIC — SINCE 1905

Reflects the Quality of Quality Products Lamcote

LAMCOTE is the process of permanently affixing a lustrous, transparent, tough film of plastic to the surface of paper, cardboard, fabric or other material. Ideal for point-of-purchase advertising displays, direct mail, catalogs, book covers, die-cut novelties, box-wraps and 1001 other uses.

FOR THE LATEST WORD IN

CONTAINER SEALING EQUIPMENT

- Case Numbering
- Case Imprinting

● Write now—*today*—for your copy of PACKOMATIC's *new* MODEL "D" CASE SEALER folder that graphically pictures and completely describes this most effective and economical way to glue and seal paper shipping case tops and bottoms—*simultaneously* and *automatically.*

Learn about PACKOMATIC's production-proved unit that is adjustable to a variety of glue spreads—to a wide range of shipping case sizes—and that is adaptable to top sealing or to bottom sealing only, if desired.

Learn how America's top-flight companies—in practically every industry—prefer PACKOMATIC's MODEL "D" CASE SEALERS for their (1) simplicity of design, (2) low operating and maintenance costs, (3) economical glue consumption—and (4) for the fact that they are precision-engineered, durably built—and capable of day-in, day-out, trouble-free operation.

PACKOMATIC's *new* MODEL "D" CASE SEALER folder gives information also on PACKOMATIC's CONSECUTIVE SERIAL NUMBERER—on PACKOMATIC's AUTOMATIC CASE IMPRINTER—and on PACKOMATIC's HAND GLUE BELT COMPRESSION SEALER and MODEL "D" TOP AND BOTTOM GLUER.

Coupon below attached to your letterhead brings you PACKOMATIC's *new* MODEL "D" CASE SEALER folder without cost or obligation. See Metropolitan Classified Telephone Directory for PACKOMATIC's nearest office—or write Joliet.

Typical PACKOMATIC *Equipment*

Shipping Case Gluers & Sealers . . . Case Imprinters . . . Automatic Serial Numberers . . . Shipping Case Packers.

Carton Sealing Machines . . . Carton Feeders . . . Dating (Coding) Devices . . . Auger Packers . . . Volumetric Fillers . . . Net Weight Scales.

Paper Can Tube Cutters . . . Tube Gluers . . . Tube Cappers . . . Paper Can Conveyors . . .

For better packaging and handling tomorrow—see PACKOMATIC today.

PACKOMATIC
PACKAGING MACHINERY
J.L. FERGUSON CO. JOLIET ILL.

New York • Chicago • Boston • Cleveland • Denver
Los Angeles • San Francisco • Seattle • Baltimore
Philadelphia • Portland • Tampa • Dallas

J. L. FERGUSON CO., Dept. MP-C4
Joliet, Illinois

Please send complete data on ☐ Case Sealing ☐ Carton Filling and Sealing ☐ Can Filling Equipment.

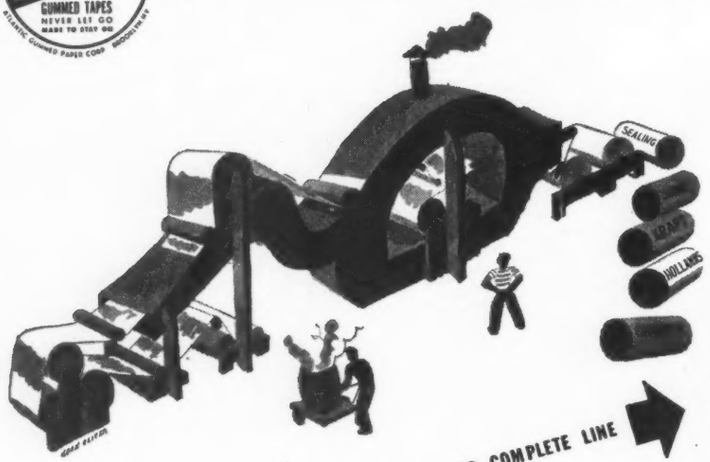
Company.....

Address.....

City.....*State*.....

A QUALITY PRODUCT
On-to-Sta
GUMMED TAPES
NEVER LET GO
MADE TO STAY ON
ATLANTIC GUMMED PAPER CORP. BROOKLYN, N.Y.

GUMMING IS OUR BUSINESS



That's Right! We're manufacturers of *On-to-Sta* Gummed Tapes and Specialties that are *made to stay on*. Assure yourself of efficient shipping operation and extra protection. . . .

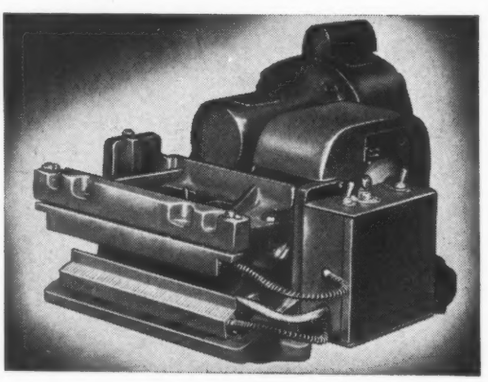
SELECT YOUR GUMMED TAPES AND SPECIALTIES FROM OUR COMPLETE LINE

GUMMED SISAL TAPE ■ HEAVY GUMMED KRAFT ■ GUMMED CAMBRICS * ■ GUMMED SEALING TAPE, PLAIN & PRINTED * ■ "CARPAC" REINFORCED SEALING TAPE ■ ASPHALT LAMINATED WATERPROOF PAPERS, REINFORCED AND DUPLEXED ■ VENEER GUMMED TAPE ■ GUMMED HOLLANDS * ■ "SOLSEAL" WATERPROOF TAPE ■ CREASED GUMMED STAY * ■ COMBINING

* SAMPLE BOOKLETS UPON REQUEST

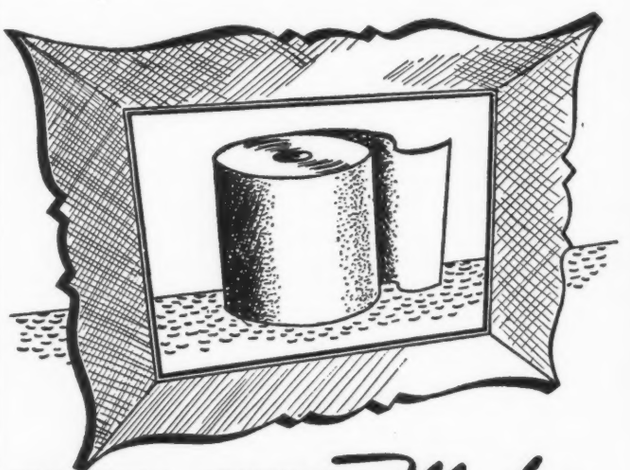
ATLANTIC GUMMED PAPER CORP.
MANUFACTURERS OF *"On-to-Sta"* GUMMED PAPERS
PLANT & MAIN OFFICE: ONE MAIN ST., BROOKLYN 1, N. Y.
BRANCH OFFICES: PHILADELPHIA • PITTSBURGH • CHICAGO • BUFFALO • BOSTON • ATLANTA • LOS ANGELES • HAVANA

Heat Sealer



Wrapade automatic and semi-automatic heat seal machine handles foils, cellophane and other heat-sealed materials. It applies correct amount of heat and pressure in proper time cycle to make secure and lasting sealing. Can be operated with perfect efficiency by unskilled labor. Applies uniform pressure, resulting in sift-proof, tamper-proof, dust-proof and sanitary packages without glue or staples.
Saves its own costs in bag size, staples, glue, etc. Prices and further information on request.
Now in use by many leading packagers.

WRAPADE
MACHINE COMPANY, INC.
1 Clinton St. Newark 2, N. J. Mitchell 2-3185



TOILET TISSUE *Makers*

IMPROVED toilet winders, interfolders, core cutters and embossers. Printing presses and sheeters for label printing and wrappers for wrapping. • High production machines, low cost operation and superior product. • Specifications and prices upon application —

HUDSON-SHARP
MACHINE CO • GREEN BAY • WIS

★ ★

What a Surprise!

ONLY last week I worried about what to wear for tonight's date! I saw the most *breathtaking* gown in one of the swankier windows, and I didn't dare imagine it would be mine. Who'd have thought one of Mr. Slowey's ads was to rescue me? Well, it *did:* Its simple message said—*Cash paid for excess stocks of bottles and bottle caps, the kind that waste space uselessly.*

"You see, my boss had piles of bottles and caps lying around that he had no use for. I told him of the ads. He phoned Mr. Slowey, and sold his excess stock immediately!

"Next day I got a swell check, a bonus for alertness! That's how I got this gorgeous gown—and just in time, too! Wait'll Bob sees me in it tonight . . ."

Remember: The Glass Container & Cap Outlet Company buys and sells containers & caps . . . ALL SIZES & QUANTITIES.

glass
container
&
cap
outlet co.
876 Broadway
New York 3, N. Y.

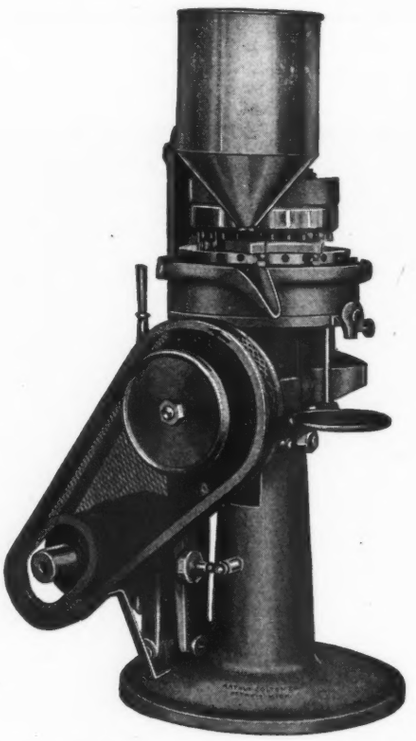
*Gown designed by Fred Perlberg, N. Y.

***phone:* ALgonquin 4-6066**

NEW
ROTARY TABLET PRESS

New series 200–25 tablet machine embodies years of experience in building equipment, incorporates refinements giving an entirely new standard of performance.

Special features include new variable lower punch pull-down track plus micrometer cell adjustment minimizing punch and die wear and practically eliminating capping; solid steel tie bar; centrally located main drive shaft; lower center of gravity. Range of operating speeds is provided by built-in variable speed drive. Power transmitted through lever operated disk clutch. Special drive materially reduces power consumption. Standard speed motor. Capacity per minute: 300–800 tablets. Diameter of tablet 3/16″ to 5/8″, maximum depth of cell: 11/16″. Floor space: 30″ X 36″, height: 60″, net weight: 1025 lbs.



ARTHUR COLTON COMPANY
2602 E. JEFFERSON AVE., DETROIT 7, MICHIGAN

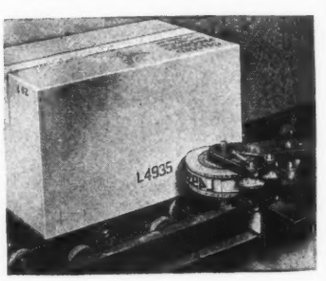
TRANSPARENT PLASTIC BOXES, CANS AND DISPLAYS
FOR PROMPT DELIVERY

Send for samples and new illustrated catalogue.

WEINMAN BROTHERS
Transparent Box Headquarters
325 N. Wells St., Chicago, 10
Some Territories Open for Experienced Packaging Salesmen

CODE DATE CARTONS or CRATES AT NO EXTRA COST WITH THE ROLACODER No. 100

ROLACODER No. 100 AUTOMATICALLY CODE DATES OR MARKS CASES OR CRATES



Marking operation may take place on a gravity roller or skate wheel conveyor; case sealer or compression unit; belt or chain conveyor.

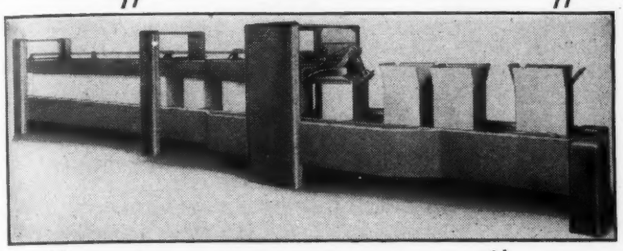
ROLACODER No. 100 is heavily constructed of cast bronze, aluminum, or iron; with ball bearings and steel shaft. Fountain ink roller is solid wool felt. Unit is guaranteed.

Outfit, including ROLACODER No. 100 with standard mounting, fountain ink roller, three sets ¾″ figures 1 to 0, and a supply of ink, is reasonably priced.

Have you a marking problem?
Consult us - No obligation

MARKING EQUIPMENT
ADOLPH GOTTSCHO, INC., 183 Duane St., New York 13, N. Y.

Designed for Efficient Packaging



ABC Automatic Top and Bottom CASE SEALER

Modern, streamlined design . . . requires no operator. Seals 30 cases per minute . . . both top and bottom, top only or bottom only. Fingertip control. Extra-rigid construction. Adjustable to 6"-18" width, 8"-30" length, 3"-28" height.

Special Engineering Service

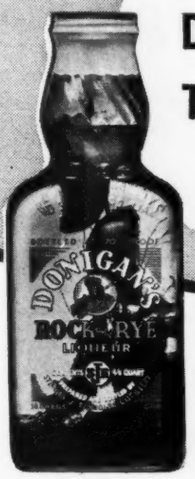
Packaging machines correctly designed and constructed to fit your own special requirements.

ABC PACKAGING MACHINE CO.
QUINCY, ILLINOIS

DECORATORS ON GLASS AND PLASTIC CONTAINERS SINCE 1936
★
4 COLORS IN 1 OPERATION —FINEST DETAIL

Anigraphic Process, Inc.
11 BROADWAY, NEW YORK 4, N.Y. • WHITEHALL 3-5253

TRANSPARENT DECALS FOR TRANSPARENT PACKAGES

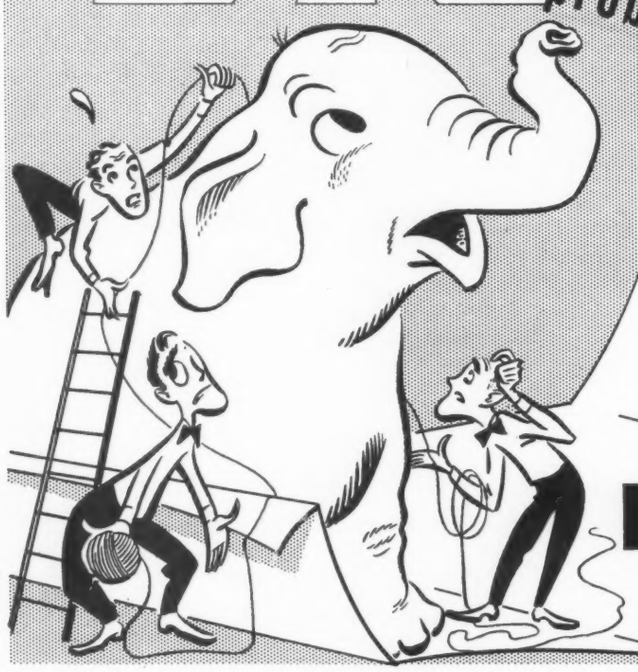


This is a good example of a Palm, Fechteler decal applied to a transparent container whose contents are sufficiently interesting so that they should not be obscured. This particular label is printed in four colors, white, black, red and gold. It is alcohol-proof, an important consideration in labelling liquors and perfumes and toilet waters. There is no limit to the designs and colors in which Palm, Fechteler decals can be produced to meet your requirements. Write for information and samples.

PALM, FECHTELER & CO.
220 West 42nd Street, New York
21 East Van Buren Street, Chicago
East Liverpool, Ohio; Boston, Buffalo

Decalcomanias for the Packaging Industries

BIG packaging problem?



. . . USE OUR *Complete* PACKAGING SERVICE!

Big job or small one, Stevens-Wiley has the facilities, the "know-how" and the personnel to see it through quickly and efficiently. For handling all types of Dry Materials, chemicals, cosmetics and household products in cartons, cans, set-up boxes, round paper packages or envelopes . . . for mixing, filling, weighing, labeling on high speed automatic equipment . . . you will find it most economical to use the Stevens-Wiley custom packaging service.

WRITE OR CALL FOR ADDITIONAL INFORMATION

THE STEVENS-WILEY MFG. CO., INC.

HANCOCK & W. BERKS STS., PHILA. 22, PA.
REGent 1616

When Eye-Appeal Means Sales-Appeal

Your product looks better—sells better—when set off by a *Lanova* box or specialty paper.

- Metal Foils
- Fancy's
- Embossed
- Wood
- Pyroxylin
- Velours
- Trade Marks
- Flints

Large varied stocks maintained for immediate delivery. Write for sample sheets and books—on your letterhead, please.

Consult without obligation our staff of packaging-design experts—at your service always!

Insist On

LANOVA

LANOVA Lachman-Novasel Paper Co.
109-111 GREENE STREET · NEW YORK 12, N.Y. WORth 4 6426

We do LINING* *of*

- VELOURS
- GLAZED FLINTS
- FOILS
- GLASSINES
- PARCHMENTS
- POSTERS

and

SELL *BOXBOARDS*

* *We have the first postwar lining machine in the U. S. now working for our customers.*

DAVING *Paper Products Co.* INC.
LINING AND BOXBOARD
540-554 Osborne Street, Brooklyn 12, N. Y.

Good Package Design

IMPORTANT TO MERCHANDISING AND TURN-OVER

Attractive packaging makes merchandise desirable. . . . It is the silent salesman of your product on retailers' shelves.

Recognized for their contribution to outstanding design in modern packaging, the ability and experience of the WLS staff of artisans are at your service.

Interview with Principals • No Obligation

36 Pages . . . 420 Pictures . . . an Exhibit of Performance
Write for a copy of it Today on your business letterhead

AMERICA'S LARGEST ORGANIZATION SPECIALIZING IN MERCHANDISE PRESENTATION

W. L. STENSGAARD AND ASSOCIATES, INC.

346 N. JUSTINE ST. • CHICAGO 7, ILLINOIS

FOR BETTER PACKAGING

WRITE, PHONE or WIRE for Quotations on Your Requirements for

PARTITIONS

IMMEDIATE ATTENTION
Given to Requests for Estimates

Prompt Deliveries Guaranteed

PETER

Reasonable Prices Assured

PARTITION CORP.

Manufacturers of Partitions for Paper Boxes

647-649 LEXINGTON AVE. BROOKLYN 21, N. Y.

Telephone: FOxcroft 9-2129

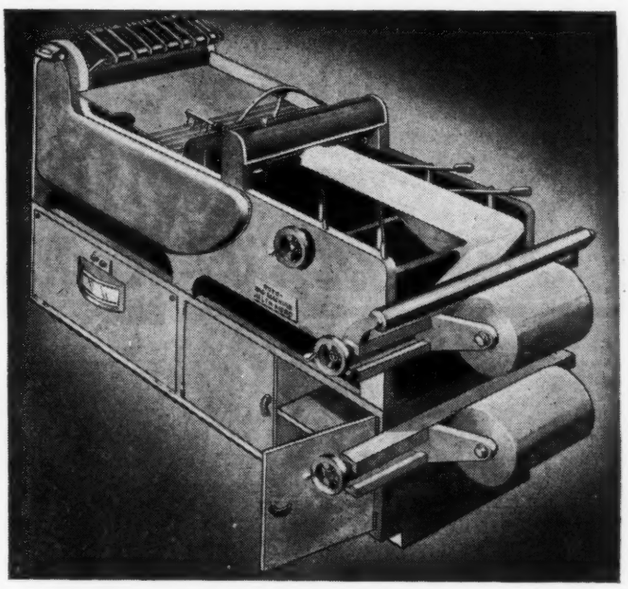
ROTO BAG MACHINE

handles

CELLOPHANE • KONOPHANE
DIAPHANE • MARALUX

or any heat-seal coated paper

FLAT--SQUARE BAGS

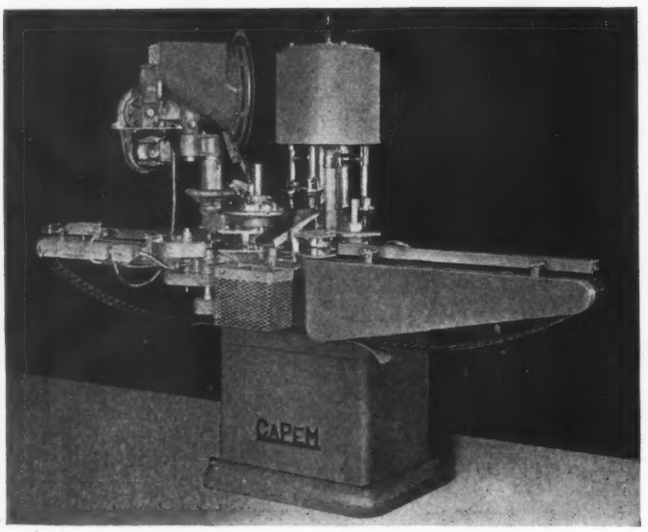


HEAT
ELECTRONICALLY CONTROLLED

PRECISE CONTROL PROVED BY THE USE OF WHEELCO ELECTRONIC PRINCIPLE PYROMETER

KONO-MEAD

133-23 35th Avenue, Flushing, L. I.
Telephone: Flushing 3-8113



CAPEM

. . . . APPLIES ANY SCREW-CAP AT 2000 TO 7500 AN HOUR . . . DELIVERS A LEAKPROOF SEAL . . . AT LOW COST

Available in 1, 2, 3, and 4 spindle models

Write for prices

CONSOLIDATED PACKAGING MACHINERY CORP.

BUFFALO 13, N.Y.

ACCURATE TEMPERATURE CONTROL with WATLOW HOT PLATES

Especially designed for accurately controlled preheating or for "work-horse" heating closely controlled for assembly operations.

Rectangular shapes are available in almost any size, also portable units, wattages to supply up to 850° F. Heating surface is highly polished, non-warping, cold rolled steel—with no plating to flake off. (Round type, gray cast iron plate.)

Full details in Watlow Catalog—send for it.

Controls: For temperatures up to 550° adjustable clamp-on bi-metallic, or bulb type thermostat is furnished. For temperatures over 550° F. 3-heat snap switch is supplied. Heating element: Burn-out resistant, replaceable Watlow Strip Units. Leveling legs supplied when specified.

SPECIALISTS IN ELECTRIC HEATING UNITS

WATLOW

ELECTRIC MANUFACTURING COMPANY

1319 N. 23d St. St. Louis 6, Mo.

HUMITUBE

REG. U.S. PAT. OFF.

A Pioneer Converter of Containers Made of

DU PONT Cellophane

HUMITUBE MFG. CO.

PEORIA 3, ILLINOIS

WITH "PERFECT-MADE"
SALESMEN'S
SAMPLE CASES—

A *Smart Presentation*
IS HALF THE SALE

You paid well for product design or package design, proving you know the value of smart appearance. Let our salesmen's sample cases carry on from there! We'll design just what you need and quote attractive prices on anything in fibre, leather or other material — no charge for sketches. Or — we may have just what you're looking for among our many stock numbers. Ask for Catalog No. 133 and give us requirements. You'll get prompt action!

ROUND EDGES AND CORNERS
A Perfect-Made feature — enhances appearance, adds strength and durability to our cases.

FIBRE PRODUCTS MFG. CO.
30 W. 13th STREET, NEW YORK 11 GRamercy 5-2166

COMPLETE
Packaging
SERVICE

LEEDS' designers are Master Craftsmen . . . they create a package outstanding for its functionalism and attractiveness.

Our Production Department furnishes you with different sizes and types of Folding Boxes, Set-Up Boxes, Bags, Envelopes, Wraps and Corrugated Containers.

We have the supplies of Boards, Paper, Foils and Films that you need! And we can convert them into packages of distinction!

Take advantage of our Processes which include Lithographing, Letter-Press, Analine Printing, Die Cutting and Laminations.

Just telephone, write or wire! We'll be glad to send an Engineer to discuss your packaging problem with you.

Leedpak SPECIALTY PACKAGE DIVISION
LEEDS SALES COMPANY, INC.
PENNSYLVNIA 6-9670 • 34 W. 34th ST. • NEW YORK 1, N. Y.

BUSCHMAN PORTABLE CONVEYOR
Cuts Handling Costs!

Save up to 30% in handling costs with Buschman Portable Conveyor. Standard sections, 10' and 5' long, convenient to carry from place to place where needed. Easily, quickly coupled together to any length, thru exclusive "Quick-Eez" feature. Curved sections available in 90° to 30° sizes. Mobile units are mounted on swivel casters. Stands are 4-legged, providing adjustable heights from 12" to 48". Low in price!

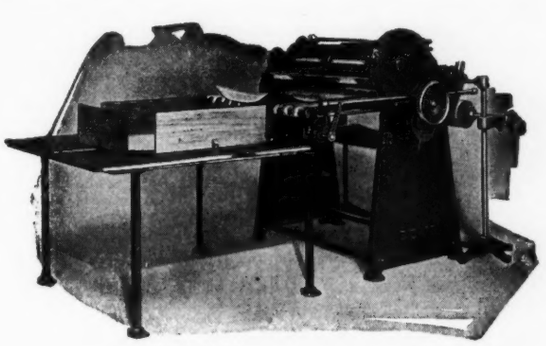
Write for Bulletin 10 Showing Applications

THE E. W. BUSCHMAN CO. INC.
Representatives in Principal Cities
435 New Street Cincinnati 2, Ohio

ARE YOU EQUIPPED to meet
RE-CONVERSION and its acutely keener competition?

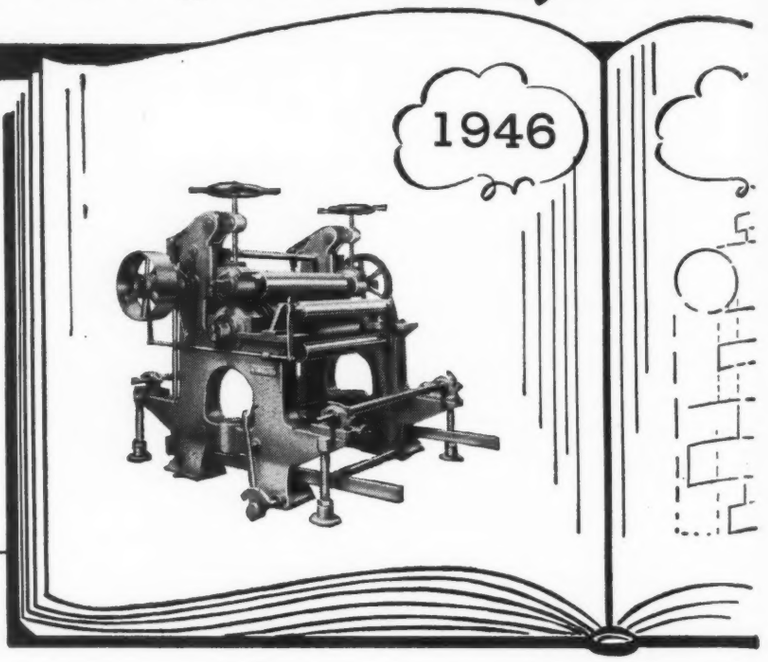
BECK SHEETERS designed and built for the mastery of accuracy and low costs, possible only through their dependable and automatic operation: these can be the unfailing answer to your needs.

Equipped with **ELECTRIC-EYE** and **SHEET-PILER** with AUTOMATIC LOWERING TABLE represents the latest in high production, automatic sheeting work.



CHARLES BECK MACHINE CO.
13th & Callowhill Streets Philadelphia, Pa.

A NORWOOD FIRST *Comes to Life*



Here is the first unit in Norwood's postwar line of paper finishing machines—the Norwood Medium Duty Embossing Machine for widths to 65 inches. Completely equipped with anti-friction bearings, this Norwood achievement is built for the high speeds and high pressures of today and the future.

Belt drive, as shown, or variable speed motor drive, according to your power facilities—screw and lever pressure unit to which pneumatic or hydraulic pressure may be added as original equipment or at a later date—open-face construction for quick roll changes—these are construction features that make the Norwood Embossing Machine outstanding.

In short, here is the ideal Rotary Embosser for use on Cover Papers, Papetries, Greeting Cards, Box and Packaging Papers and Artificial Leather—built by Norwood to meet the needs of today's packaging industry. Other models under construction to meet every requirement of speed, pressure or width.

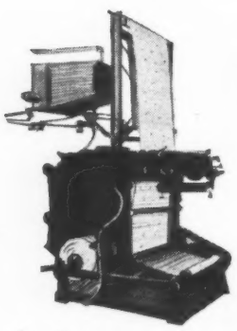
C-3

The NORWOOD
ENGINEERING COMPANY
14 No. Main St. • Florence, Mass.

"If you use Paper - you can use Norwood"

WE MANUFACTURE . . .

The Milgate Line of "Specialty Papers"



. . . ON OUR OWN LAMINATING COATING AND CONVERTING EQUIPMENT . . .

During the war, our research and production facilities, having been placed at the disposal of the government, were devoted extensively to turning out special, protective packagings. Today, the knowledge gained under those conditions, is being applied to improve our line of peace time papers.

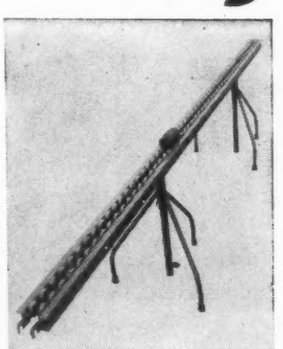
The current scarcity of materials confines our output to "Astex," an industrial waterproof wrapping; "Silver-glas" a novelty decorative sheet; Milgate thermo-plastic label paper; "Freez-Pac," a coated parchment with an extremely low MVTR rate, designed for frozen food packaging; "Sheencote," a high gloss, water and soil proof cover paper, available in white, black and red; and a new laminated vegetable parchment, suitable for lamp shade and greeting card stock.

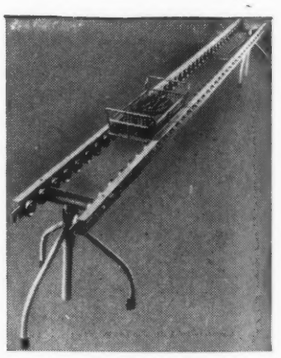
The Milgate Line will eventually include all types of cloths, acetates, foils, boards, glassines, cellophanes and papers, "hot-melt," emulsion or solvent coated and/or laminated. Analine printing and roll embossing add to its versatility.

We solicit your inquiries. New Milgate papers will be coming through regularly. If the paper you want isn't in production, samples and prices of all new items will be sent you promptly as the line is expanded. Send us your name . . . today.

PACKAGING DIVISION 784 Public Ledger Building
E. W. Twitchell Incorporated Philadelphia 6, Pa.

Keep 'em rolling WITH SPEEDWAYS





● Bottles or bullets or boxes, Speedways — the all-purpose low cost case conveyors — keeps 'em rolling — by gravity!

Save labor costs — save power bills — save time — with lightweight Speedways — the cheapest, fastest, shortest, distance between two points!

IMMEDIATE DELIVERY
Speedways Conveyors are stocked by agents in principal cities of U. S. and Canada.

STANDARD MODELS
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5' & 10' Straight Sections
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3 Sizes Adjustable Stands
6 or 8 or 10 Wheels Per Foot

SPECIAL MODELS
4¼" to 20" Widths
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KEEP 'EM ROLLING WITH SPEEDWAYS CONVEYORS, INC.
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NEW PLASTIC COATED FOILS, FABRICS AND PAPERS TO WATERPROOF AND MOISTURE-VAPOR PROOF PACKAGES. ALSO, PROTECTION AGAINST MILDEW, ACID, DAMPNESS AND RUST.

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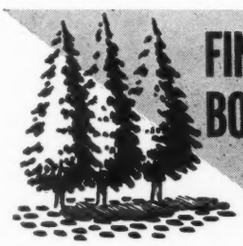
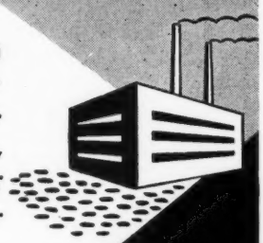


FINE WOODEN CHESTS BOXES · DISPLAY CASES

"From Standing Timber to Finished Product"

We specialize in the design and manufacture of silverware chests, jewelry and display cases, wooden boxes, packing cases and other wood containers. Your inquiry invited.



ROCK

Manufacturing Company

STOUGHTON, MASSACHUSETTS

Filma-Seal

CAP AND SEAL APPLIED AS ONE

Filma-Seal* keeps the moisture out—seals the original qualities *in*—exposes tampering, prevents contamination. The seal is in the screw cap and you apply cap and seal in one operation. The seal stays on the bottle, safeguarding your product until the consumer peels off the inner seal.

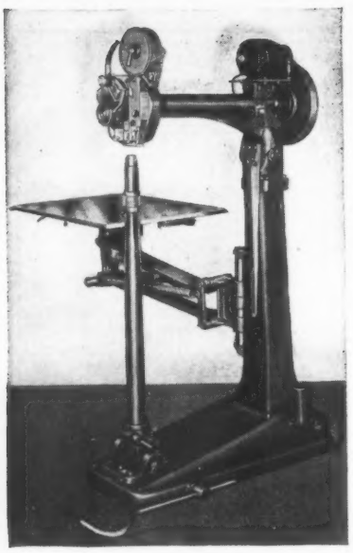
Send today for illustrated checklist of glass closure problems solved by Filma-Seal.*

FERDINAND Gutmann & COMPANY

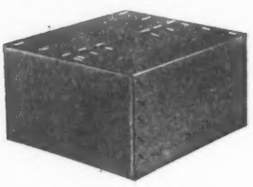
SINCE 1880

3601 14th AVENUE • BROOKLYN, N. Y.

*Reg. U. S. Pat. Off. and abroad



Set Up for Bottom Stitching



BLISS TOP *and* BOTTOM STITCHER

Corrugated or Solid Fibre Containers Are Stitched Both TOP and BOTTOM on This STITCHER

TOP and BOTTOM Stitched Containers are now specified for packing numerous products. On this Stitcher the bottoms of containers may first be wire stitched, then filled and the tops sealed with wire stitches.

The illustration at the left shows the machine set up for bottom stitching of containers.

For top stitching of filled containers, the post is removed and table and blade anvil swung into position as illustrated at right. Less than one minute is required to make the change.

The counterbalanced table is quickly adjustable for varying heights of boxes.

Built in two sizes, with 15″ and 25″ throats and 26x30″ work table. Handles boxes up to 25″ in depth. Standard Bliss Heavy Duty Stitcher Head is used. Motor ¼ HP.

Wire Stitching both top and bottom provides a uniformly secure closure and gives added strength and rigidity to the case.

Set Up for Top Stitching

Write for further information.

DEXTER FOLDER COMPANY, 330 West 42nd Street, New York 18, N. Y.

Chicago: 117 West Harrison Street Philadelphia: 387 Bourse Building Cincinnati: 1335 Paxton Street

BINGHAM BROTHERS

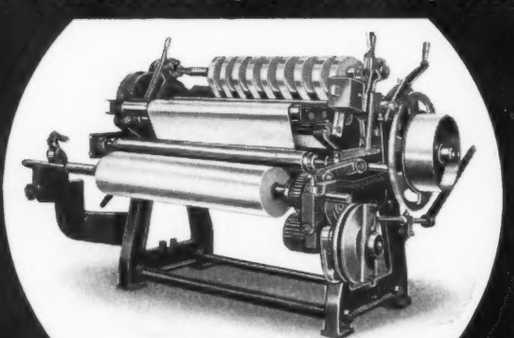
ESTABLISHED 1826

"STAR" ADHESIVES

BINGHAM BROTHERS

BINGHAM BROTHERS COMPANY • Main Office: 406 Pearl Street, New York 7, New York • Baltimore, Philadelphia, Rochester, Newark and Garwood, N. J.

FOR COMPACT, CLEAN-CUT ROLLS OF CELLOPHANE, SYLPHRAP, ETC.



CAMACHINE 24-7

Camachine 24-7 is a slitting and roll-winding machine for Cellophane and similar transparent materials, especially designed to overcome the difficulties peculiar to handling such products. The delicacy of the material and its lack of uniformity in thickness necessitate extra care in handling, which is provided for in this machine. The end result is a distinctly better roll that brings more economical and satisfactory performance in the later process of packaging. Operation is simple and requires no skill.

WRITE FOR ILLUSTRATED LITERATURE

CAMERON MACHINE COMPANY

61 POPLAR STREET, BROOKLYN 2, N. Y.

MIDWEST OFFICE: 111 W. MONROE ST., CHICAGO 3, ILL.

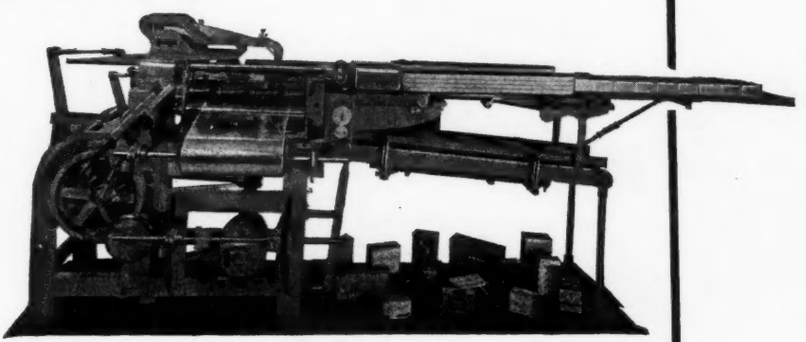
FOR TOMATO* WRAPPING IN CARTONS

IT PAYS TO WRAP THE HAYSSEN WAY

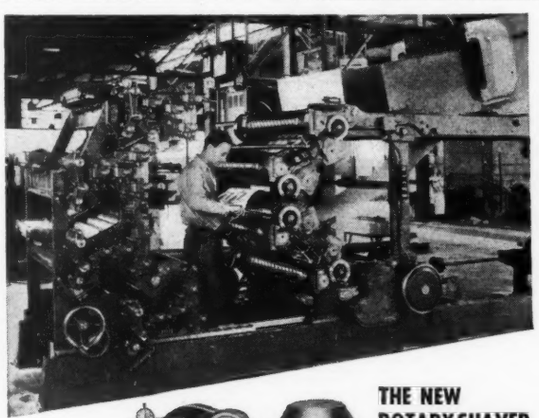
Luscious tomatoes, selected for size, taste and perfect contour, can now be Hayssen-wrapped in packages that have irresistible sales appeal. The new Hayssen Tomato Wrapping Machine embodies such features as automatic flap tucker, thermostatic heat control, automatic take-off and unloading chute, as well as facilities for electric eye registration. Loading and unloading are done at the same end of the machine, either automatically, or manually by one operator. Write now for details on packaging fruits and vegetables.

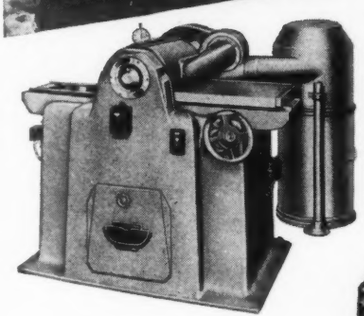
HAYSSEN MFG. COMPANY,
Sheboygan, Wis.

** Adaptable for wrapping all types of fruits packaged in tray-type cartons . . .*



HAYSSEN ELECTRONIC CONTROLLED WRAPPING MACHINES





THE NEW ROTARY SHAVER

with less moving parts, for simplicity, accuracy, durability and safe operation. Controlled heights guaranteed within .001". For better printing plates, send for free illustrated folder.

THE NEW PLATE REGISTERING MACHINE

that registers plates swiftly, accurately, safely for little money. Send for free illustrated folder.

5 Simple Operations

that conspicuously reduce 4 to 6 color printing costs.

1. To make ready, unlock the ink carriage, turn hand wheel, step in, register plates, adjust ink roller or raise tympan sheet.
2. Lightning speed on all four color printing—625 to more than a thousand feet a minute, guaranteeing 100% hairline register.
3. Press button speed control. Full view ink fountains, with micrometer control, adjusted while the press is in motion.
4. Perfect hydraulic automatic rewind or sheet delivery.
5. Long, steady runs on glassine paper or stock up to 240 pound basis at unbelievably low maintenance costs.

SEND FOR FREE ILLUSTRATED BOOKLET

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Printing Press & Equipment Manufacturers

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WE GRIND OUR OWN INKS
TO GIVE YOU

America's Finest Packaging!

Sketch of ink grinding machine at Stecher-Traung plant.

INK is important in packaging! We grind chemically tested, fade-proof dry colors in the finest grades of varnish to make our own inks . . . to give our customers the benefits of top quality, maximum color choice and lowest cost. No wonder many of America's biggest firms come to Stecher-Traung, the leader in FULL Color label lithography, for high quality FULL Color labels, box wraps and cartons that sparkle with eye and sales appeal!

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Labels • Box Wraps • Seed Packets
Folding Boxes • Merchandise Envelopes and Cards • Advertising Material

STECHER-TRAUNG
LITHOGRAPH CORPORATION
Rochester 7, N. Y. • San Francisco 11, Calif.
Offices in Principal Cities

Plan to Attend

1946

INDUSTRIAL PACKAGING EXPOSITION

HOTEL SHERMAN

Chicago, Illinois

APRIL 24 - 25 - 26

Displays of Materials, Equipment and Supplies used for Industrial Packaging. 3-Day Educational Clinic covering Corrosion Prevention, Interior and Exterior Packaging, Materials Handling, Palletizing, Loading and Shipping.

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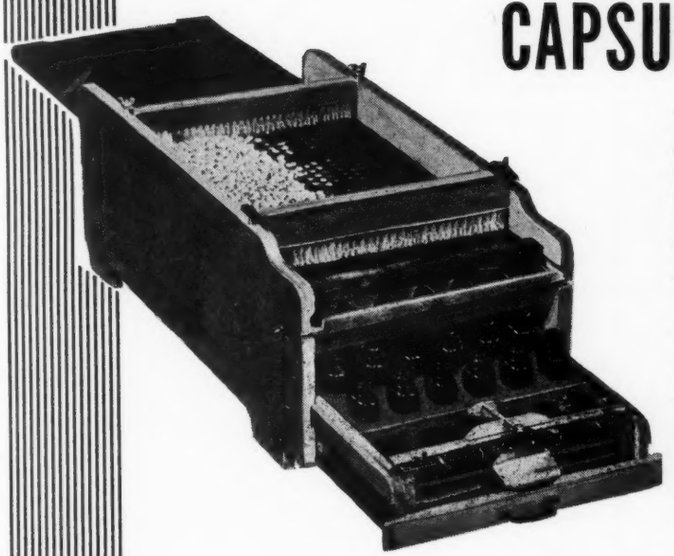
Tel. Andover 2664

★

Write Manager, Hotel Sherman
For Room Reservations *NOW*

INCREASES TABLET, CAPSULE PACKING 600%



The OTTA-MATIC tabulating and packing machine counts and packages tablets and capsules into cartons, bottles or envelopes. In specific cases (names on request) this little giant increases production as much as 600%. This machine is only 32 x 16", is light weight (55 lbs.) sturdy, completely sanitary, instantly adjustable to all sizes of tablets and containers. There is nothing to wear out or get out of order.

One user writes ". . . one of the best investments we ever made . . ." Another says ". . . we were able to bottle and label 250,000 capsules in six hours . . . ." This machine must be seen to be appreciated! Best quality materials are used throughout. Interchangeable loading and container racks are supplied.

A ten day free trial offer is your best proof of money saving, efficiency, accuracy, speed and durability. One year guarantee on each machine.

C. L. OTTAWAY MFG. CO.

200 WEST POMONA STREET • MONROVIA, CALIFORNIA

DOMINICK CORDIANO

Announces

the sale of his interest in, and resignation of the presidency of

CORDIANO CAN COMPANY, INCORPORATED

to devote his full time as president, to

ITALIAN COOK OIL CORPORATION

Packers of

Italian Cook Oil, San Gennaro and Bravo Oils, Royal Cook Mayonnaise, French Dressing, and Salad Dressing.

ITALIAN COOK OIL CORPORATION

129 - 47th Street Brooklyn, N. Y.

Finishing—the final touches—can make or break your package. We specialize in every type of finishing operation — varnishing, lacquering, gumming, die-cutting, embossing, punching, straight cutting, paraffining — and offer our special process: LUSTRALITING.

JOHN W. CRAWFORD CO.

Est. 1859

160 VARICK STREET, NEW YORK, N. Y.

WAlker 5-5473

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Publisher reserves the right to accept, reject or censor a classified copy.

NEW IDEAS. English Company, unique connection dairies, seeking new ideas for milk containers to place on market. Conversion of paper, board, transparent films or possibly plastics. Box 402, Modern Packaging.

FOR SALE: Opal Jars and Caps, 1 oz., 300 gross; 2 oz., 200 gross; 4 oz., 100 gross; 5 oz. overflow (Fancy Jar), 100 gross. GLASS CONTAINER & CAP OUTLET COMPANY, 876 Broadway, N.Y.C.

Executive to head Brands and Packaging Division of large Chicago merchandise organization. Position requires expert buying knowledge of packaging supplies, direction of designing program and building of private lines. Please give full data. All replies will be held in strict confidence. Our organization knows of this advertisement. Box 403, Modern Packaging.

FOR SALE: Immediate Delivery 100,000 48mm Bakelite Caps, 500,000 22mm Bakelite Caps and many other sizes. GLASS CONTAINER & CAP OUTLET COMPANY 876 Broadway, N.Y.C.

WILL BUY: large size one and two color Offset presses any make at top prices. Please give full details. Box 404, Modern Packaging.

WANTED

Folding carton Production Superintendent for integrated plant located in Middle West. Experienced in all phases of folding carton work, to assume control of quality and production. Box 390, Modern Packaging.

Modern package and product Styling, Architectural Interior and Engineering Design. Product, Industrial & Engineering Design Co., 33 West 42nd St., Bryant 9-1374, Fordham 5-5556.

Filling Machinery Wanted for Immediate Delivery

Needed three fully automatic filling machines for filling cardboard cartons with a free flowing powder. Must have fully automatic top and bottom sealers. Size of package to be filled $6^1/_8'' \times 2^1/_{16}'' \times 8^1/_2''$.

The Theobald Industries
P. O. Box 72, Harrison, New Jersey Telephone KEarny 2-6280

VETERAN—35; married; 6 years experience in metal and paper containers; marketing and sales promotion; desires new connection. N.Y. area. Box 405, Modern Packaging.

Wanted: Experienced Manager for Midwest Carton Division Integrated Mill. Must be familiar with layouts and planning of work. Box 406, Modern Packaging.

Wanted: Bag Makjng Machine for Cellophane, etc., with electric eye. Box 407, Modern Packaging.

As its contribution to orderly re-employment MODERN PACKAGING will print free of charge in its "Position Wanted" classification one ad, not to exceed 20 words, for each honorably discharged veteran of the armed forces of the United Nations who has had previous packaging experience.

WANTED for purchase or to manufacture and sell paper or fabric specialty lending itself to laminating, coating or light semi-hand manufacture. Box 409, Modern Packaging.

WANTED TO BUY, TOYS, NOVELTIES, ETC. Cut outs, toys, books, drawings, puzzles, dolls, stationery, with or without printing. In cardboard, paper, wood, metal, leather. Abstract goods, close-outs. LINDNER'S TOY EXCHANGE, 153-MP West 33 St., New York City 1, N. Y. Longacre 5-7712. *Seeking factory representation.*

EXPAND, RETIRE or ESTABLISH YOURSELF—

with the aid of young, aggressive and reliable Sales Executive who is thoroughly experienced in all phases of Packaging and the Graphic Arts. Good Contacts, honest enthusiasm and $30,000.00 are available. Box 408, Modern Packaging.

ARTIST

"Top flight creative designer for advertising display to work in lithography, wood, plastic, etc. This organization aggressive; personnel very young; working conditions good. All traveling and moving expenses paid.

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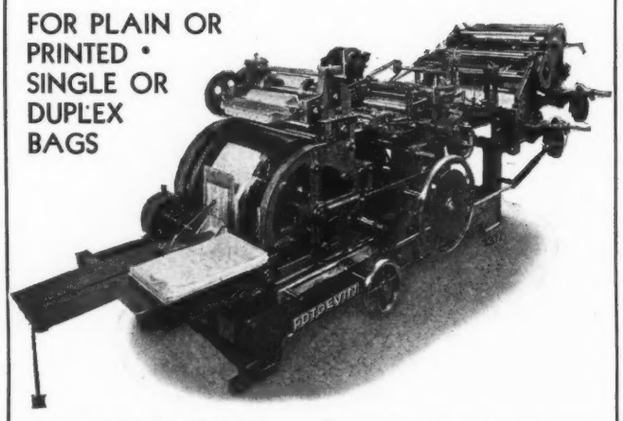
POTDEVIN

HIGH-SPEED

CELLOPHANE BAG MACHINES

FOR PLAIN OR PRINTED • SINGLE OR DUPLEX BAGS

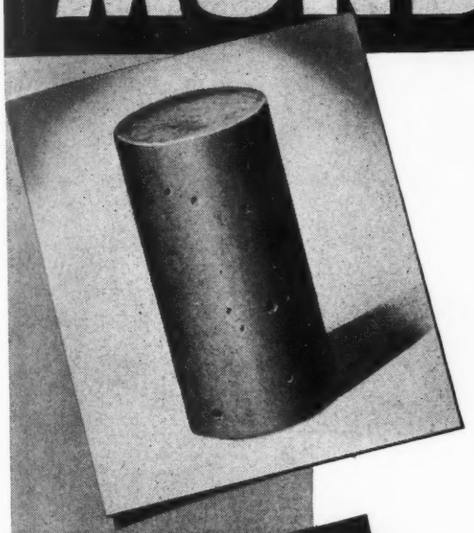


PMC-2377 POTDEVIN Model 111-C, High-Speed, Vertical Delivery, Cellophane Bag Machine for larger sizes of (F&S) flat and/or square "tucked" bags.

When equipped with compensator and "electric eye" it produces printed bags from preprinted, rewound rolls of material, the printing being registered on the finished bag.

POTDEVIN MACHINE CO.
1244—38th Street Brooklyn 18, N. Y.
Established 1893 Tel. WIndsor 6-1700

MUNDET CORKS



QUALITY varies in Cork, as it does in other raw materials. The cork oak's production is affected by climate; by method and frequency of stripping; by the age of the tree. This affects your bottle sealing for better or worse.

We've specialized with cork for 80 years. We know cork in all its many grades. We've kept our own representatives in areas where the world's finest commercial cork is grown—to be sure of getting the best of each year's yield. And we've redesigned and improved cork manufacturing equipment on the basis of what we have learned about bottle sealing. Your products benefit from this experience and from Mundet's determination to give you the best possible closure service. You *safe-seal* your bottles when you use Mundet Corks and Closures. Mundet Cork Corporation, Closure Division, 65 S. Eleventh Street, Brooklyn, N. Y.

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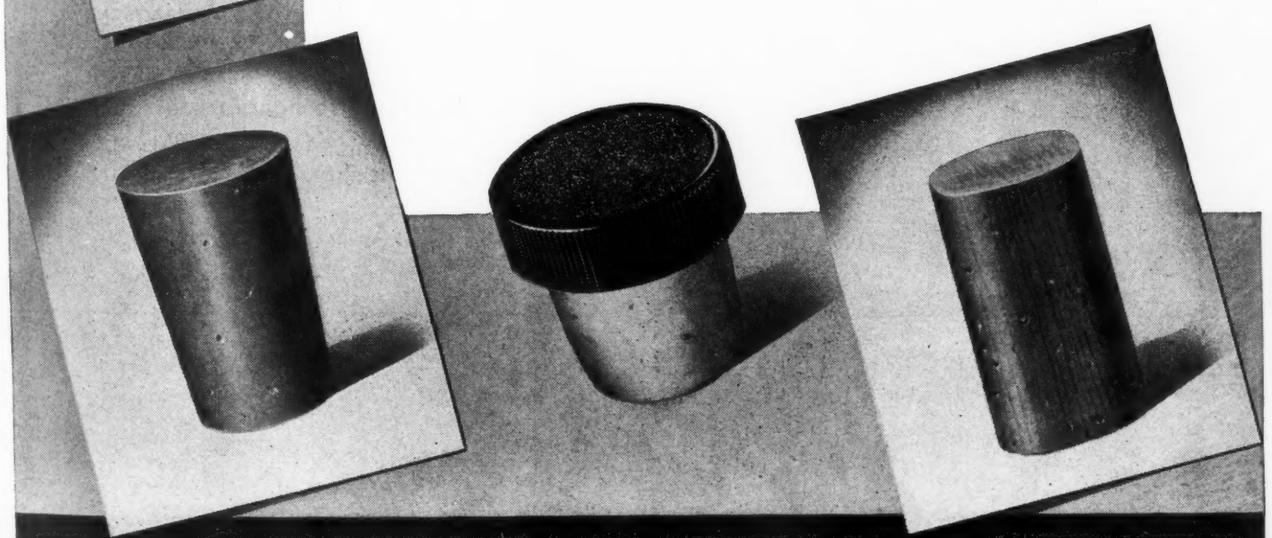

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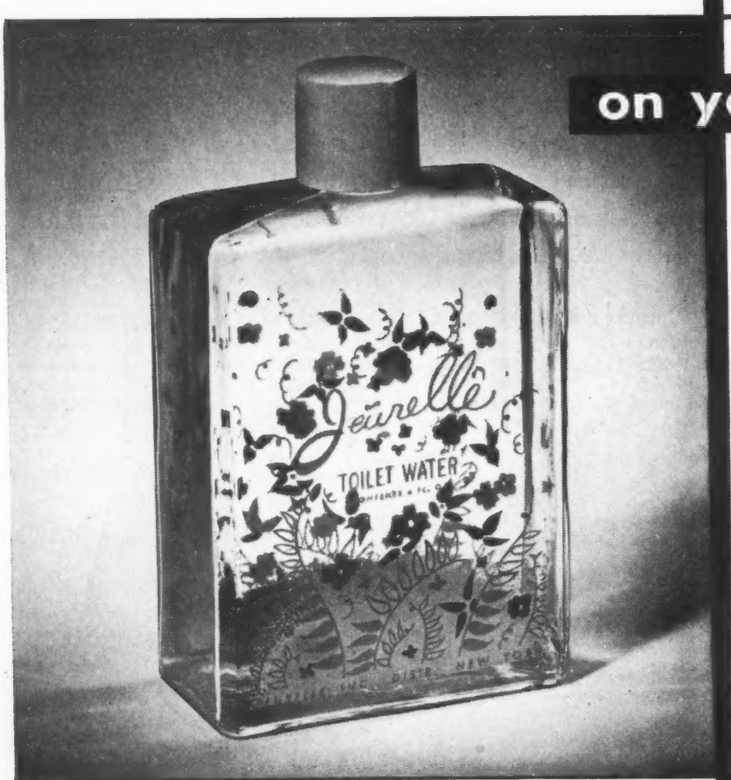

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